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British Society for the History of Pharmacy

840 Melton Road, Thurmaston, Leicester, LE4 8BN
Tel: 0116 264 0083, Fax: 0116 264 0141, Email: bshp@associactionenterprises.com
Website: www.bshp.org

The British Society for the History of Pharmacy was formed in 1967 under the aegis of the Pharmaceutical Society of Great Britain, having originated from its History of Pharmacy Committee.
BSHP seeks to act as a focus for the development of all areas of the history of Pharmacy, from the works of the ancient apothecary to today's ever changing role of the community, hospital, wholesale or industrial pharmacist.

Aims

Promotion of historical studies related to pharmacy.
Advancement of knowledge and propagation of understanding of the history of pharmacy.
Publication of the research work of pharmaceutical historians.
Preservation of pharmaceutical artefacts and historic pharmacies.
Support for the work of relevant museums and offering advice on establishment of other pharmaceutical exhibits and on the preservation of pharmacies.
Co-operation with related professions and local historians on medico-pharmaceutical topics of mutual interest.

Pharmaceutical Historian

The *Pharmaceutical Historian* has been published since 1967, at first intermittently, but on a regular quarterly basis from 1972. Issues generally comprise 16 pages and cover.
An index for the years 1967-1995 was published in 1998. An index for 1996-2000 was published in 2000 and for 2001-2005 in December 2005.
Papers, short communications and letters in English on any aspect of the history of pharmacy are welcome and should be sent to the address above or by email to *bshpeditor@associationhq.org.uk*
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Editor: Ainley Wade, BPharm, MPhil, FRPharmS
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Friday 30 March–Sunday 1 April 2007
Annual Spring Conference, Wakefield
The 2007 BSHP Conference will be held at the Waterton Park Hotel near Wakefield, West Yorkshire from March 30th to April 1st.

Wednesday 9 May 2007
'Electricity and the Enlightenment' by Dr Nicholas Cambridge. Lambeth 6.30 p.m.
5 to 8 September 2007

Wednesday 14 November 2007
'Pharmacy, Quackery and the Growth of Medicine in early modern England' by Patrick Wallis. Lambeth 6.30 p.m.

22nd Congress of British Society for the History of Medicine
Wednesday 5 September – Saturday 8 September 2007
To be held at West Park Centre, University of Dundee, Scotland. See *www.bshm.org.uk* for further details.

John G Iles BSc, FRPharmS
We regret to report the death in November 2006 of John Iles, community pharmacist in Highbury, North London and member of Council of the RPSGB for three years. After his retirement he joined the BSHP committee and served as its Treasurer from 1999 to 2005.

Dr Stuart A Anderson, President of BSHP 2002-5, was awarded the Fellowship of the Royal Pharmaceutical Society in January 2007 for distinction in the history and practice of pharmacy.

38th International Congress for the History of Pharmacy

19-22 September 2007, Seville, Spain
'Drugs and medicines from both sides of the Atlantic Ocean'
To be held in NH Central Convenciones Hotel, Seville. Further details of registration and hotel bookings can be found on the Congress website, see *www.38ichp.org/presentation.html*
Papers are welcome and Abstracts should be submitted online before 30 April 2007, using the formand details provided.
The main subjects are:
Pharmacy and Spanish-American colonial therapeutics.
The diffusion of the Spanish-Arab and Spanish-Jewish pharmacy in northern Africa and the eastern Mediterranean.
Health in America. Influential exchanges between the metropolis and the colonies.
Pharmaceutical historical heritage.
Free Lectures.
The Congress is organised by the International Society for the History of Pharmacy, the International Academy for the History of Pharmacy, Spanish Society of University Professors for the History of Pharmacy, and the University of Seville.

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The Rise and Fall of Mithridatium and Theriac in Pharmaceutical Texts

Patrizia Catellani and Renzo Console

Introduction

Mithridatium and Theriac have often been mentioned together in pharmaceutical literature, and their properties and virtues, i.e. their ability to prevent and fight poisoning, have been described in similar terms. Both these remedies date from Greek-Roman antiquity and remained in use for nearly twenty centuries.

We often find the names 'Mithridatium Damocratis' and 'Theriaca Andromachi' in the old books. The reason is that usually the authors were referring to Galen's works, which were among the earliest and best known containing antidotes of this kind. Galen always attributed them to specific earlier authors, e.g. Damocrates and Andromachus in our case. His successors continued to do the same.

The main difference between the two was the absence of the flesh of vipers in Mithridatium and its presence in Theriac. Mithridatium however contained the flesh of skink, a lizard living in the Nile and regarded as poisonous. Andromachus replaced it with viper's flesh, probably because the skink was very difficult to find in Europe. Therefore from this point of view Theriac was a western evolution of Mithridatium, and the main innovation was the replacement of one reptile's flesh with another's. Some other ingredients were also added.

Though viper's flesh was supposed to prevent or cure the effects of poisonous snake bites, Mithridatium continued to be used especially by those who feared deliberate poisoning, which was very unlikely to be perpetrated using live vipers!

The efficacy of both antidotes was accepted without question for many centuries by medico-pharmaceutical authors, including the most distinguished ones. It was thought that a polypharmaceutical product–composed with many simple ingredients–should have at least all the virtues of every component; and also that these virtues would reinforce one another rather than being in conflict. This great efficacy was not seriously questioned until the 18th century.

We should be aware that the terms Mithridatium and Theriac in the past were not only used to refer to two specific antidotes in medical texts and pharmacopoeias. They had a number of different meanings over the centuries in their Greek and Latin versions. This will be explained in the course of the present article.

Damocrates and Andromachus

Servilius Damocrates and Andromachus the Elder were both Greek physicians and pharmacologists who lived and worked in Rome approximately at the same time, i.e. in the 1st century AD under the rule of Nero. Most of what we know about them comes from Galen's works. Both these physicians wrote medical treatises which unfortunately have not reached us directly, and therefore we have to rely on the excerpts published by Galen. This gives us very little information about their theories, but we can appreciate their formulae, which they both used to write in Greek verse.

This habit not only produced pleasant texts, but also had the practical advantage of avoiding possible errors in the quantities and units of measure of the ingredients. In fact, being expressed in full words, they would not have the ambiguity of the letters and other special symbols used by other authors who wrote in prose.

Galen favoured these two physicians among those who lived not long before him. We are going to see his reasons for this in the course of the present article.

The Origin of Mithridatium

Damocrates in the second half of the 1st century AD and Galen in the 2nd century were not the earliest authors to describe Mithridatium. Aulus Cornelius Celsus had already explained how to prepare it in his *De Re Medica* at the beginning of the 1st century AD. Having presented the antidote called Ambrosia which was made by Zopyrus for King Ptolemy, he had introduced Mithridatium using these simple words:[1]

> Antidotum Mithridatis. However [the antidote] by Mithridates is also very noble. By taking it every day the King himself is said to have made his body safe against the dangers of poisons.

This is followed by a formula containing 38 ingredients.

A few decades later Scribonius Largus gave his own formula of Mithridatium with 22 ingredients (but the first part of the recipe is missing). Around the time of Damocrates, the famous Pliny the Elder (Gaius Plinius Secundus) wrote in his *Historia Naturalis* that Mithridatium contained 54 ingredients, but he did not specify them, nor did he mention his source. Therefore we cannot know whether he had in mind Damocrates' formula, which had a similar number of ingredients.

With very few exceptions, the vast majority of the authors regarded Mithridates (or his team) as the inventor of the antidote bearing his name; but the various versions of the story did not always dispel some justified doubts about Mithridates' role already expressed by Pliny (and reinforced much later by William Heberden). On the other hand, Pliny was the only author in antiquity to mention that Pompey brought Mithridates' archives to Rome after defeating him; but he did not say what they contained.

Apparently nobody for about a century after Mithridates' death wrote that he had created an antidote, until Celsus, Scribonius and Pliny did so. Later Galen did not mention these authors about Mithridatium (possibly because he was not

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particularly interested in Latin books); but his works[2] clearly show that Mithridatium was already well known in the 2nd century. He thought Damocrates' version was the best of the five by Greek authors which he had seen and recorded.

The 'Original' Formula of Mithridatium

While there is no doubt that Theriac with viper's flesh is Andromachus' improvement on Mithridatium, and therefore his formula can be regarded as the 'original' one, the search for the 'original' Mithridatium has been unsuccessful.

Gilbert Watson[3] (in 1966) and Laurence Totelin[4] (in 2004) have tried to trace the 'original' formula of Mithridates' antidote, under the assumption that he must have created and recorded a composition that Pompey found after his victory against the King's army and then brought to Rome. But if such a formula existed, it disappeared for at least a century and then reappeared in many different versions. So it is not possible to say which one it was, or if it was indeed one of them. The task of historians has not been made any easier by the habit of the old medical and pharmaceutical authors of not specifying their sources nor explaining the processes by which they had achieved their preparations.

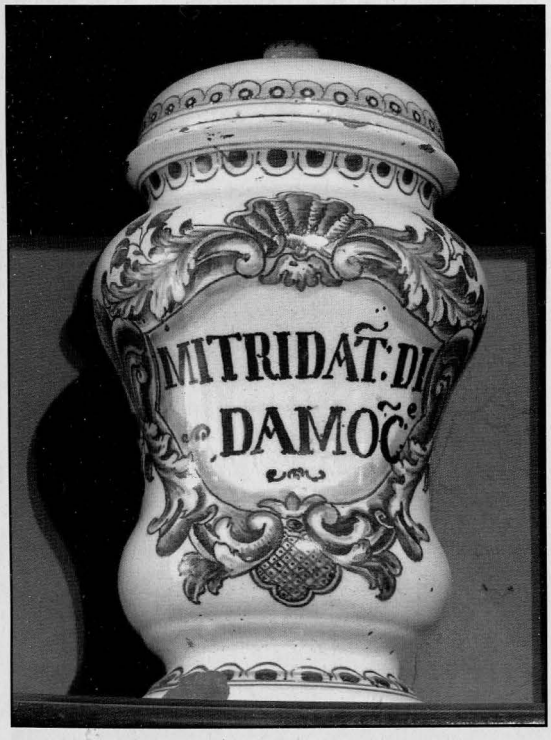

Figure 1. Eighteenth century jar for Mithridatium. (Courtesy of Farmacia della Scaletta, Imola.)

The result is that there does not seem to be any obvious evolution in the formulae from one author to the next: all of them appear to have random similarities and differences. But the compositions became more stable and repetitive after the first appearance of Galen's works in the 2nd century A.D.

As an example of what those formulae contained and how they were presented in verse, we show one below. It comes from Galen's transcription of Damocrates' Mithridatium in Greek verse, translated into Latin and printed in 1533.[5] We have translated Galen's brief introduction into English, but not Damocrates' verse, which is shown here in Latin:

> Some distinguished men have declared that the antidote called Mithridatium is an effective medicine against any affection, and all poisons.

Arabicae myrrhae Troglodytidis decem
Drachmae, croci decem, agarici rursus decem,
Sic gingiberis decem, cinamomi sic decem,
Nardi spicae decem drachmae, thuris decem,
Thlaspis decem drachmae, seselis, opobalsami,
Iunci rotundi, stoechados, terebintinae,
Et galbani, costi, piperis longi, atq; pontici
Castorei, hypocistidis succi, & styracis boni,
Opopanacis, malabathri foliorum novi,
Fac singulorum ex omnibus bis quattuor,
Nigrae casiae septem, & polii denarii
Septem, piperis albi totidem, sic scordii
Daucique cretici tantumdem seminis:
Iam balsami fructus, & cypheos idem
Da pondus: at nonnulli hic addunt bdellium
Aequale, nardi purgatae, atque gummeos,
Et petroselini succi, succi quoque papaveris,
Et cardamomi, item foeniculi seminis,
Et gentianae, & foliorum ponas rosae,
Cuiusque drachmas quinque, paululo amplius
Sit cretici dictamni aequalis portio,
Anisi, & arii pariter tres denarii,
Acorique, phu, sagapeni quoque drachmae pares,
Athamantici meu, necnon acaciae,
Scincique ventris, hypericique seminis,
Horum omnium aeque singulatim erunt duae
Drachmae semis, vini modicum, mellis itidem
Modicum, invicem haec omnia isto pacto praepara.

One of the ingredients is called Cyphi. It was a compound that contained many aromatic herbs and was also used on its own as an incense for religious ceremonies. A long and detailed description of Cyphi follows in Damocrates' text, but it is omitted here.

The Different Meanings of the Term 'Theriac'

The Greek and Latin versions of the name Theriac had been used long before Galen's time. For example, in the 2nd century BC the Greek poet Nicander had written a book on venomous animals entitled *Theriaka*. Gilbert Watson explains that the Greek word *theriake* is derived from *therion*, 'a wild or venomous animal', and was often used as an adjective to qualify the name of an antidote. The Latin form coined by the Romans is *theriaca*, which can be a noun or an adjective, and can be either feminine singular or neuter plural.

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In both languages when the adjective preceded the name of an antidote, it meant that the antidote was effective against venomous bites, or that it contained parts of wild animals, or both.[6] We should therefore be aware that the current meaning of Theriac (in all modern languages) as a generic name for antidotes containing viper's flesh is not the same as the various meanings it had before Galen's time. He was the first author to use the word Theriac rather consistently in the modern sense (although he also mentioned a small number of very old Theriacs that did not contain vipers).

Also, apart from the presence or absence of viper's flesh, Galen's Mithridatic compounds, Theriacs and other antidotes cannot be easily distinguished on the basis of specific characteristics: they all have similar purposes and contain ingredients chosen according to unspecified criteria.

The Origin of 'Modern' Theriac

As Galen explained,[7] Andromachus was the first pharmacologist to mix viper's flesh with the other ingredients in an antidote. He called it Galene but Galen named it Theriac. Since then it has never been called Galene, although Andromachus could not possibly have imagined that in more than 1900 years he would still be famous for an antidote called Theriac.

Most 'modern' authors have accepted the traditional thought that Andromachus created his antidote by using Damocrates' Mithridatium formula, replacing the skink with the viper, and removing or adding some ingredients. This cannot be proved or disproved, but the present authors have compared the components of the two antidotes (in the original formulae found in Galen's books) to identify possible similarities. The results are as follows:

The two antidotes have comparable numbers of ingredients (Mithridatium 52, Theriac 56). The common ingredients are 39; which means that 13 ingredients are only in Mithridatium and 17 only in Theriac. Therefore approximately 70% are common and 30% are not.

If we consider that the number of different ingredients used in antidotes known to Galen was well over 150 or even 200, it is statistically nearly impossible that Damocrates' and Andromachus' formulae could have been developed totally independently. Considering that the two authors were contemporaries, the conclusion has to be that they either had a common source or one had seen the antidote described by the other. Therefore the tradition that Andromachus used Damocrates' formula may well be right.

A direct relationship between the two authors is also a possibility, if we consider that Damocrates also described two Theriacs (in verse) that contained viper's flesh. If Galen was right in saying that Andromachus was the first to use the viper, then Damocrates must have seen his formula. To this we should add that the other Mithridatic antidotes known to Galen, plus those described by Celsus and Scribonius Largus, only had between 22 and 44 ingredients. Therefore the chances that Andromachus used one of those formulae seem low.

Favourite Theriacs

Among various Theriacs, some of which were very old, Galen explicitly favoured the one described by Andromachus under the name Galene (which means 'tranquillity' and is unrelated to Galen's name). Andromachus' authorship of this new antidote has never been questioned. One reason why Galen preferred Andromachus' Theriac (as well as Damocrates' Mithridatium) was the fact that they had written their treatises in verse, as we have already mentioned. For example, Galen also published a version of Andromachus' formula that had been converted into prose by his son Andromachus the Younger, but he did not particularly like it.

However this was not the only reason for Galen's preference, if we consider that he also had two Theriacs by Damocrates and one by Galen himself, all in verse. Galen's books clearly show that he held the two physicians in high regard, particularly for introducing the viper (in the case of Andromachus) and for the precision of the descriptions (in the case of Damocrates). For example, Galen wrote:

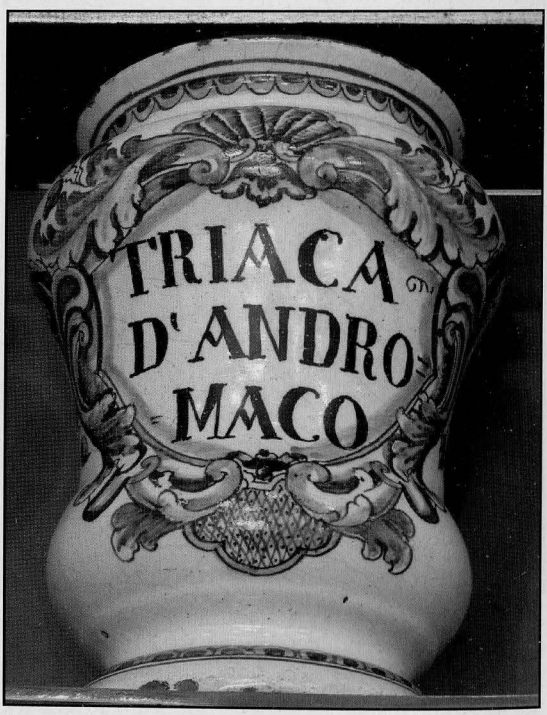

Figure. 2. Eighteenth century jar for Theriac. (Courtesy of Farmacia della Scaletta, Imola.)

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'Andromachus was a man worth remembering', 'Andromachus was accurate in his formulae', 'Damocrates was an outstanding physician', 'The whole of the book by Damocrates on the preparation of antidotes is elegantly composed in verse', 'Damocrates described Theriac more clearly than Andromachus'.[8]

Andromachus' Theriac and Damocrates' Mithridatium also enjoyed the favour of later authors in the course of the centuries; and this was surely influenced by Galen's opinion, due to his fame and the continuing prestige of his books.

Middle Ages

Between Galen's time and the end of the Middle Ages both Mithridatium and Theriac were described in various important medical texts, like those of Oribasius (*Collectorum Medicinalium Libri*, 4th century), Aetius Amidenus (*Tetrabiblos*, 6th century), Paulus Aegineta (*De Re Medica*, 7th century), Niccolò da Salerno (*Antidotarium Nicolai*, 12th century) and Nicolaus Myrepsus (*Medicamentorum Opus*, 13th century). They either gave formulae (and sometimes more than one for the same antidote) or simply referred to Galen and to others. The efficacy of those antidotes was not questioned.

Erhart Kahle wrote an essay in 1982 about Mithridatium in Arab medical literature.[9] He listed (in German, Arabic and Latin) the ingredients of five slightly different formulas of Mithridatium given by five Arab authors over a period of more than 7 centuries. The authors were at-Tabari (810-855?), al-Magusi (Haly Abbas, 10th century), Ibn Sina (Avicenna, 980-1037), Ibn Hubal (1122-1213) and al-Antaki (who died in 1599).

Their formulae are clearly derived from the one by Damocrates reported by Galen, although the ingredients and their weights are not precisely the same and the earliest one by at-Tabari is rather different from the others. It seems likely that all these authors had studied Galen's Greek text.

The best known among those Arab authors is certainly Avicenna, whose works, printed many times from the late 15th century for at least 200 years, are still available in major libraries. The 5th book of his *Canon*,[10] called *Antidotarium*, begins with the antidotes that he regarded as the most important, and in particular with several versions of Theriac and the one of Mithridatium studied by Kahle. His first formula of Theriac is presented as a 'more sublime medicine' than any other antidote.

Arnold of Villanova (1240?-1311), probably born in Catalonia, wrote on many subjects and also caused some controversy (especially on alchemy and religion); but his medical books were held in great esteem. A very successful commentary on

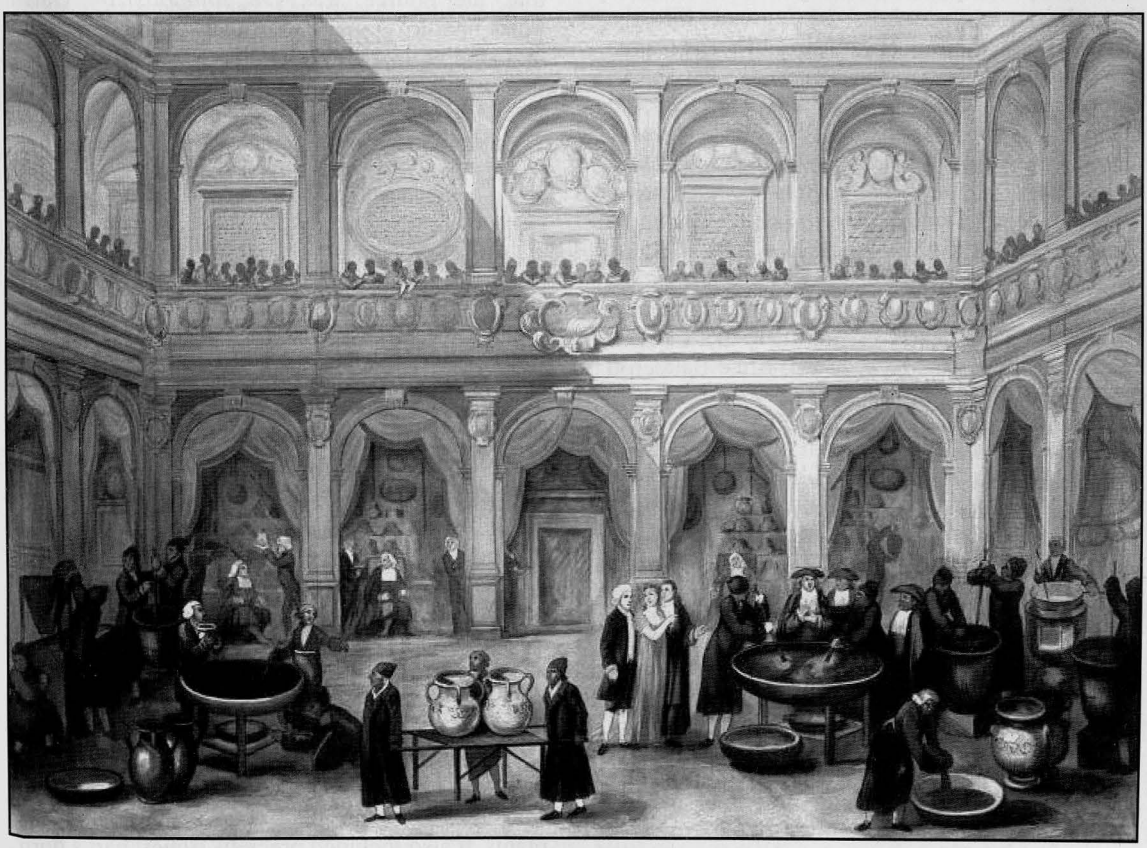

Figure 3. Public manufacture of Theriac at Bologna. (Wellcome Library, London.)

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Regimen Sanitatis Salernitanum, attributed to Arnold and printed many times from 1480, praises Mithridatium and Theriac as two of the best antidotes against 'deadly poisons'.[11]

Arnold also wrote an *Antidotarium* where formulae for Mithridatium and Theriac were included and discussed extensively and favourably.[12] One of Arnold's favourite medical authors was the Arab Averroes (1126-1198), who had written a treatise on the virtues and use of Theriac but had not described its formula and preparation (unlike his Arab colleague Avicenna mentioned before). The Italian Pietro d'Abano (aka Petrus de Apono, 1257-1315) did a similar thing in his book about poisons.

Modern Era

For the purpose of our chronology the modern era starts with the appearance of printed books in the late 15th century. There was a great cultural awakening in Europe and the number of books published, particularly in the 16th century, was extraordinary. They were printed in Latin and the most common subjects were religion, history, pharmacy and medicine. Many of these Latin texts were new translations of Greek ones (e.g. those by Galen).

Also many new medico-pharmaceutical books were written and published. Only to mention books that the present authors have seen directly, formulae for Mithridatium and Theriac were included in general works by Manlio del Bosco (*Luminare Maius*, 1494), Quirico degli Augusti (*Lumen Apothecariorum*, 1495), Paolo Suardo (*Thesaurus Aromatariorum*, 1536), Joannes Actuarius (*De Medicamentorum Compositione*, 1541), Jacques Dubois (*Methodus Medicamenta Componendi*, 1541), Johannes Placotomus (*Pharmacopoea in Compendium Redacta*, 1560), Charles de L'Écluse (*Antidotarium*, 1561), Girolamo Calestani (*Osservationi*, 1575), Laurent Joubert (*La Pharmacopée*, 1588), Brice Bauderon de Sénecé (*Paraphrase sur la Pharmacopée*, 1627), Moyse Charas (*Pharmacopée Royale*, 1676), Nicolas Lémery (*Pharmacopée Universelle*, 1697) and Giovanni Battista Capello (*Lessico Farmaceutico-Chimico*, 1728). These books were among the best known in those centuries and, in addition to the formulae, usually contained extensive comments about the virtues of the two antidotes. Moreover the authors often gave their own 'improved formulae' and explained why they were recommending those changes; but none of them went so far as to deny the value of the original compositions altogether.

In the same period many authors wrote specifically about Mithridatium, Theriac or both.[13] The majority of them were not as well known as the ones mentioned earlier, but it seems that, particularly in the 17th century, before the discovery of the benefits of Quinquina bark, there was a need for something effective against fevers. Most of these books–printed in various European countries–recommended Mithridatium and Theriac for this purpose.

Our two antidotes were also included in official pharmacopoeias, like the one that can be regarded as the very earliest, i.e. the *Receptario* of 1498 compiled by the College of Physicians in Florence.[14] The formula for Theriac is the one by Andromachus according to Avicenna. The formula for Mithridatium is taken from Niccolò da Salerno's *Antidotarium Nicolai*.

The other early pharmacopoeia is the *Dispensatorium* by Valerius Cordus, officially issued for the City of Nuremberg in 1546.[15] It contains several formulae of Mithridatium and Theriac, all taken from Galen and accompanied by detailed explanations of the characteristics of many of the ingredients.

The *Antidotarium Romanum* is another early official pharmacopoeia. It was first published in 1583 in Latin for the physicians and apothecaries practising in Rome[16] and originally contained only one formula for Theriac ('*Theriaca Andromachi ex Galeno*') and one for Mithridatium ('*Mithridatium ex Democrate, carmine conscriptum*') with very brief explanations of their preparation. It is clear that the source was *De Antidotis* by Galen. Formulae in Italian and many comments were included in later editions.

Many pharmacopoeias in use in European cities in the subsequent centuries included Mithridatium and Theriac. For example, the present authors have found their formulae in the *Parisiensis* (1638), *Bruxellensis* (1641), *Ultrajectina* (1656), *Hagiensis* (1659), *Antverpiensis* (1660), *Gandavensis* (1663), *Brugensis* (1697), *Cassoviensis* (1732) and *Leodiensis* (1741) pharmacopoeias.

Public displays of the manufacture of Theriac under the authorities' supervision became particularly popular in the 17th century especially in Italy and France (see Fig. 3). And pamphlets describing such events were still being published in Paris and Aix-en-Provence as late as 1745 and 1757.[17]

Sometimes Mithridatium and Theriac were added as ingredients to other antidotes in order to make them even more effective. For example, Leonello Vittori included them in remedies against pestilental fevers in his two treatises *De Aegritudinibus Infantium* ('On children's illnesses', 1544) and *Practica Medicinalis* (1545).

The distinguished Italian botanist and physician Pietro Andrea Mattioli (1501-1578) created a spectacular antidote against all poisons consisting of 125 simple ingredients, plus Theriac and Mithridatium.[18] In addition to a great variety of plants, it also included precious stones, hart's horn, unicorn, red coral and pearls. It must not have been

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cheap or easy to prepare and, unsurprisingly, it does not appear to have been included in any pharmacopoeias.

Also the varied formulae of Orvietan, a popular and controversial antidote created by 'charlatans' and later adopted and developed by apothecaries and physicians, often had Theriac and Mithridatium among its ingredients. This has been explained by the present authors in an earlier article.[19]

British authors do not appear to have been as keen as their continental colleagues to write about the use and merits of Theriac and Mithridatium. However many British apothecaries and physicians were surely making and prescribing them since all the editions of the *Pharmacopoeia Londinensis* from 1618 to 1746 and of the *Pharmacopoeia Edinburgensis* from 1699 to 1744 included formulae for Mithridatium and Theriac. This is the one for Mitridatium taken from the London 1746 edition:[20]

> Mithridatium, sive Confectio Damocratis. Recipe Cinnamomi drachmas quattuordecim, Myrrhae drachmas undecim, Agarici, Nardi Indicae, Zingiberis, Croci, Seminum thlaspis, Thuris, Terebinthinae Chiae, singulorum drachmas decem, Junci odorati, Costi, vel ejus loco zedoariae, Malabathri folii, vel ejus loco macis, Stoechadis, Piperis longi, Seminum seselis, Succi hypocistidis, Styracis calamitae colati, Opopanacis, vel ejus loco olei nucis moschatae expressi, Castorei Russici, singulorum unciam unam, Polii, Scordii, Carpobalsami, vel ejus loco cubebarum, Piperis albi, Seminum dauci Cretici, Bdelii colati, singulorum drachmas septem, Nardi Celticae, Radicis gentianae, Foliorum dictamni Cretici, Rosarum Rubrarum, Seminum petroselini Macedonici, cardamomi minoris decorticatorum, foeniculi dulcis, Gummi Arabici, Opii colati, singulorum drachmas quinque, Radicis calami aromatici, valerianae silvestris, Seminum anisi, Sagapeni colati, singulorum drachmas tres, Mei athamantici, Hyperici, Acaciae, vel ejus loco terrae Japonicae, Ventrium scincorum, singulorum drachmas duas cum dimidia, Mellis despumati triplum omnium pondus.

With few variations, this was still Damocrates' formula as reported by Galen. The same formulae for both antidotes appeared in various English editions of the *London Pharmacopoeia* (called *London Dispensatory*) by Nicholas Culpeper and William Salmon.

Many Modern Theriacs

Andromachus' Theriac as described by Galen is undoubtedly the most common in European pharmacopoeias printed since the late 15th century, but it is not the only one. Also Galen's own Theriac appears a number of times. In addition to these we can find the 'Theriac of the Germans', that was regarded as even stronger but less soporific, because it contained less opium.

Another common Theriac was called Diatesseron or 'Theriac of the poor', because it only contained four inexpensive components plus honey and was attributed to the Arab physician Mesue; but it was not a proper Theriac because it did not contain viper's flesh.

Many of the most distinguished authors later added their own 'improved' formulae; and there were many variations of Andromachus' Theriac in local pharmacopoeias because of uncertainties on the nature of the original components or because some were not available.

In some places the formulae were prescribed by the authorities and also changed from time to time; and the preparation of Theriac was only allowed to take place ceremonially in public and under strict control. This was mainly due to the vast financial interests involved. However in some Italian cities it was also possible to purchase specific Theriacs coming from other areas.

Theriac remained more prestigious than Mithridatium, because viper's flesh was thought to be particularly effective against all sorts of poison. However both antidotes were generally included in pharmacopeias and regarded as interchangeable.

Early Criticism

Until the 18th century, no European pharmaceutical or medical authors had been prepared to question the usefulness of very complex polypharmaceutical compositions. Their use had only been criticised in specific cases where it did not appear to be appropriate. However there had been instances of criticism since Greco-Roman times, even before Galen's writings. For example Pliny the Elder (23-79 A.D.) expressed strong scepticism about polypharmacy in his *Historia Naturalis*:[21]

> Mithridates' antidote consists of 54 things, none of which has the same weight, and of some things only one sixtieth of a denarius[22] is required. Which god's trickery does this show? Indeed man's subtlety cannot be so great. This is obvious ostentation of skill and prodigious exploitation of knowledge.[23]

In the 17th century the famous Italian scientist, writer and physician Francesco Redi (1626-1698) was always suspicious of ancient complex medicines that were still fashionable. He had an inquisitive mind and preferred to test their virtues experimentally before accepting that they were effective. In 1684 he published a book entitled *Osservazioni Intorno agli Animali Viventi Che Si Trovano negli Animali Viventi* ('Observations on living animals that can be found in living animals') where he described a number of experiments. The purpose of one of them was to verify whether Mithridatium, Theriac and Orvietan were effective against worms, as it was generally claimed and believed. He placed a quantity of the three antidotes in containers where he was keeping live

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worms; and these did not suffer any ill effects over a period of many days – even as the quantity of medicine was increased day by day.

Nicolas Lémery, the best known French pharmacologist of the 17th century, did not go as far as denying the value of the old antidotes, but expressed reservations about mixing so many substances in a single medicine. For example, he wrote these harsh words on the efficacy of Mattioli's aforementioned antidote:[24]

> Those who judge the quality of a composition according to the great diversity of its ingredients will certainly take advantage of this; but those who through experience have realised that five or six types of well chosen drugs can produce a better effect than so many, will ridicule these monstrous descriptions, which only serve the purpose of throwing dust in one's eyes, making the composition very expensive and difficult to prepare.

Lémery also wrote this comment on Theriac:[25]

> Although this composition enjoys a sort of veneration in Medicine, both for its antiquity and for the effects that it has produced, I think we could make a more effective remedy with a small number of the most essential substances that it contains, chosen and mixed together according to the Physician's idea, without the pain of making such a great and complex preparation. [...] It is cumbersome to prescribe such a large number of different drugs for each disease that can be treated using Theriac. Those drugs do not seem to be included because of the choice of a skilled Physician. [...] It appears that those who have invented Theriac, Mithridatium and other similar large pharmaceutical compositions, have thought that by mixing together a great variety of components, they would obtain from one what cannot be obtained from another, the remedy being sometimes wiser than the person who prescribes it.

Antitheriaka

A small book entitled *Antitheriaka* was published in England in 1745.[26] The author was the young physician William Heberden (1710-1801), who later would be much praised for his medical treatises. Heberden's concern was the fact that traditional polypharmaceutical products like Mithridatium and Theriac were still held in high regard by physicians and used by patients without their virtues being scrutinised through rational theories and rigorous experiments.

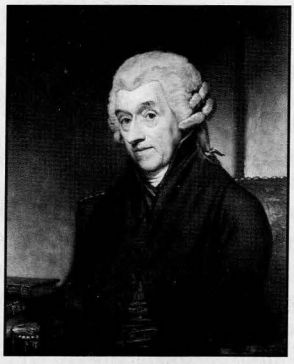

Figure 4. William Heberden (1710-1801) initiated the demise of ancient polypharmaceutical antidotes by attacking them in his pamphlet *Antitheriaca* (1745). (Wellcome Library, London.)

Heberden's pamphlet did not go unnoticed and was also published in France (in 1751) when Dr Matthieu Maty (1718-1776) translated it in its entirety for his *Journal Britannique.* Despite going against the trend still prevalent, the appearance of Heberden's booklet coincided with the decline of Mithridatium and Theriac and possibly accelerated it.

Heberden started by questioning the traditional story of Mithridates VI of Pontus as a pharmacologist. He suggested that greedy people had exploited both the legend and peoples' fear of poisons in order to revive, complicate and sell Damocrates' and Andromachus' recipes, which then acquired respect and renown. Heberden then questioned what was really known about poisons in antiquity and the effectiveness of old antidotes, particularly for poisons discovered later than the antidotes were. He believed that the selection of their ingredients had occurred randomly; and in his view this fact was proved by the number of different formulae that existed when Galen wrote his books. So we cannot chose a recipe and trust it.

Having, in his own view, dismantled the necessity for a universal antidote, Heberden explained his fears about the uncontrolled use of ingredients such as opium. They, being mixed in random quantities with so many other substances, could poison the patients. And after discussing in detail all the dangers of Mithridatium and Theriac, and the lack of evidence of their benefits, he proposed that they should be finally banned. He also commended the few enlightened individuals who were going in that direction.

The Demise of Mithridatium and Theriac

The 1756 edition of the *Pharmacopoeia Edinburgensis* was prepared by a Committee of the Edinburgh Royal College of Physicians on the basis of the then current 1744 edition. The historian David L. Cowen has described a copy of that edition that had been annotated by an influential member of the Committee, possibly Dr John Clerk, during the preparation of the new edition.[27] Cowen has reproduced some pages showing that *Mithridatium Damocratis*, *Theriaca Andromachi* and *Theriaca Edinensis* should be expunged. In fact, they do not appear in the 1756 edition.

It is very likely that Heberden's arguments had been taken into account in Edinburgh. However they had been made public too late to influence the 1746 edition of the *Pharmacopoeia Londinensis* that was nearly ready when Heberden's pamphlet was published. So he had to wait until 1788 to see his views adopted in London.

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Mithridatum and Theriac also disappeared from pharmaceutical texts in other parts of Europe, but not simultaneously or rapidly. After they had been removed from the *Pharmacopoeia Edinburgensis* they could still be found, for example, in all the late editions of Nicolas Leméry's *Pharmacopée Universelle* (until 1764) and of Giovanni Battista Capello's *Lessico Farmaceutico-Chimico* (until 1792). In 1800 Étienne-Louis Geoffroy was still recommending them against arsenic poisoning in his *Manuel de Médecine Pratique*.

In Paris the last public preparation of Theriac took place in 1790. Mithridatium and Theriac were kept in the pharmacopoeias of France, Spain, the Kingdom of Sardinia and Germany until the 19th century and in the Paris *Codex* until 1908.[28] And finally, even today it is possible to find a harmless aromatic version of Theriac still sold in northern Italy.

Acknowledgement

The authors, who are not native English speakers, wish to thank Michael Taylor for revising the text.

Authors' Addresses: Patrizia Catellani, *patcat@interview.it;* Renzo Console, *mail@renzoconsole.demon.co.uk.*

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22. A denarius was a small silver coin and also a unit of weight. It was approximately equivalent to 3 grams.

23. Present authors' translation.

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Articles for Publication

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History of Pharmacy at the University of Wisconsin-Madison: Glenn A. Sonnedecker and a Bibliography of his Publications (1948–2004)

Holger Goetzendorff

Pulheim, Germany

After the end of his studies of the History of Pharmacy (PhD 1952), Glenn Sonnedecker, pharmacist and editor, became successor to George Urdang, who held the first chair in the History of Pharmacy in the USA in the University of Wisconsin-Madison in 1947–1952.

Sonnedecker had a decisive interest in the development of the American Institute of the History of Pharmacy (AIHP) and continued the standard work *History of Pharmacy,* which was originally authored by Kremers and Urdang.

Glenn Allen Sonnedecker was born on the 11th December 1917 in Creston, a village of 1000 souls in Ohio. His father owned a horse rent stable and later a coal business. His mother was a housewife and occasionally gave piano lessons. A druggist in the family was the decisive factor to turn him towards pharmacy. In 1942 Sonnedecker passed his pharmaceutical state examination for licensure in Ohio. In the next year he married his wife Cleo.

Figure 1. Glenn Sonnedecker (1942), KRF Madison

Editor in Washington

In 1942 Sonnedecker entered the editorial staff of the Science Service in Washington, to work with newspapers, radio and the *Science News Letter.* This created the basis for an invitation from the American Pharmaceutical Association to join its staff, primarily as the Editor of the Practical Pharmacy Edition of its monthly Journal, *Journal of the American Pharmaceutical Association,* when he was just 25 years old. Robert P. Fischelis, then general manager of the Association, observed that much of Sonnedecker`s effectiveness derived from his ability to integrate scientific development into the occupational field of practical pharmacy.

History of Pharmacy in Madison

During national pharmacy conferences in the 1940s Sonnedecker became acquainted with George Urdang and the unique program in the history of pharmacy that he had been able to establish (1947) at the University of Wisconsin. Meanwhile, Urdang and Wisconsin University became interested in recruiting Sonnedecker to become the first graduate student in the new Ph.D. program.

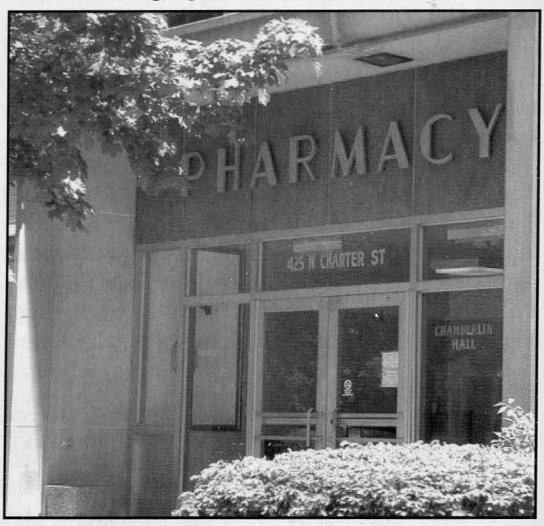

Figure 2. Pharmacy Building, 425 Charter Street, (1996), Madison, Wisconsin

Encouraged by Prof. Louis W. Busse and Dean Arthur H. Uhl of the School of Pharmacy, Sonnedecker resigned his post in Washington and moved his family to Wisconsin in 1948. With Urdang as his 'major professor', he completed doctoral requirements in 1952, with a dissertation titled 'American Pharmaceutical Education before 1900'. His graduate studies had also earned a joint major in the University`s Department of the History of Science.

Figure 3. Glenn Sonnedecker, Garnet Paterson, George Urdang, Alex Berman, (about 1950), KRF Madison

Professor for the History of Pharmacy

Urdang reached the mandatory retirement age as a faculty member that same year; and the University decided to invite Sonnedecker to remain in Madison as Urdang`s successor, starting as

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Assistant Professor in the History of Pharmacy. In 1956 he became an Associate Professor and received, in the following year, a joint appointment in the Department of the History of Science. From 1960 until retirement in 1986 he held a full professorship. Having studied sociology as a secondary field in his doctoral program, he initiated and developed the first USA doctoral program in Social Studies of Pharmacy (1961–1975), with the cooperation of the Department of Sociology, until a full-time separate chair was authorised by the University.

During these years he guided several Master`s candidates, three post-doctoral fellows from other faculties, and five doctoral candidates as follows:

Sami K. Hamarneh: Some pharmaceutical aspects of al-Zahraw`s al Tasrif about 1000 A.D. (1959)

Ernst W. Stieb: Drug Adulteration: Detection and Control in Nineteenth-Century Britain. (1966)

Hans-Peter Stechl: Biological Standardization of Drugs before 1928. (1969)

Bernard P. Des Roches: A Comparative Study of the Pharmacist as Preceptor in Wisconsin and Ontario. (1970)

Gregory J. Higby: William Procter Jr. (1817–1874) and His Contribution to American Pharmacy. (1984)

The main focuses of his activity are reflected in the bibliography of his writings.

In 1964 he received an honorary doctorate from Ohio State University, in 1974 from Massachusetts College of Pharmacy and in 1989 from the Philadelphia College of Pharmacy and Science.

Secretary and Manager of the AIHP

On the 22nd January 1941, on the incentive of Urdang, the American Institute of the History of Pharmacy (AIHP) was founded by Arthur H. Uhl, Edward Kremers, Louis W. Busse, Lloyd M. Parks, Jennings Murphy and George Urdang. They organised the Institute as a national historical society, but based at the UW-Madison, which afforded access to its remarkable collections of books of pharmaco-historical content, periodicals, letters, photographs and pharmaceutical artefacts.

This engraving, now the Seal of the American Institute of the History of Pharmacy, was done about 1800 by the renowned American artist Peter Rushton Maverick (1755-1811), for Jacob Schieffelin, ancestor of William J. Schieffelin, Jr., present President of Schieffelin & Company, wholesale druggists, New York City.

Figure 4. Seal of the American Institute of the History of Pharmacy, KRF Madison

From 1949–1957 Sonnedecker was secretary of the AIHP. The close friendship with George Urdang arose from that time. Sonnedecker followed him as the Director of the AIHP (1957–1973 and 1981–1985). He continued the international collaboration founded by George Urdang. From 1955 to 1956 he worked as a Fulbright-Research Scholar and Fellow of the John Simon Guggenheim Foundation in London and Frankfurt.

Together with Ernst W. Stieb, Sonnedecker undertook a major reorganisation and expansion of collections now called the Edward Kremers Reference Files and attained, at the Wisconsin Historical Society, a separate manuscript repository for pharmaceutical Americana.

Figure 5. Holger Goetzendorff and Glenn Sonnedecker in the Edward Kremers Reference File, (1999), Madison

Kremers and Urdang's *History of Pharmacy*

In 1963 Kremers and Urdang's *History of Pharmacy* appeared in the third edition, much revised by Sonnedecker. He had already helped Urdang in the improvement of the second edition and created with the fourth edition of 'Kremers and Urdang' in 1976 a new revision. It is still without counterpart today in the English-speaking world, a textbook for enthusiasts of the history of pharmacy, including 136 pictures and tables.

Pharmacy in History

Sonnedecker founded the quarterly journal *Pharmacy in History*, now in its 48th volume (2006). The current editors today are Gregory J. Higby, director of the AIHP, and Elaine C. Stroud. Although American in emphasis, international aspects of the history of pharmacy are also published. For example, in 2003 a special issue appeared which dealt with the world of the Italian druggist (see inside back cover). Sonnedecker still writes articles for almost every issue.

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Lifetime Achievement Award

Lifetime achievement awards have been conferred by the American Pharmaceutical Association (1972 Remington Medal), the American Foundation for Pharmaceutical Education (1994 Profile Award), and by the Ohio State University College of Pharmacy (2001). Beside many other American and international honours, he received in Germany in 1971 the Schelenz Plakette and in 1972 the Fritz Ferchl-Medaille.

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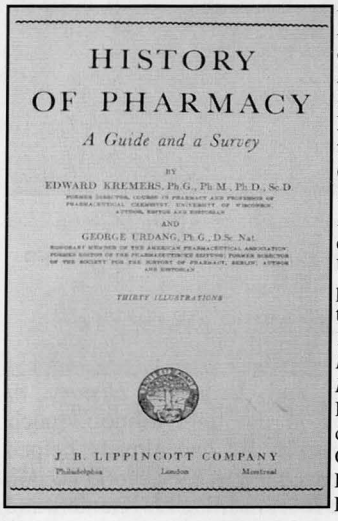
HISTORY
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BY
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AND
GEORGE URDANG, Ph.G., D.Sc. Nat.
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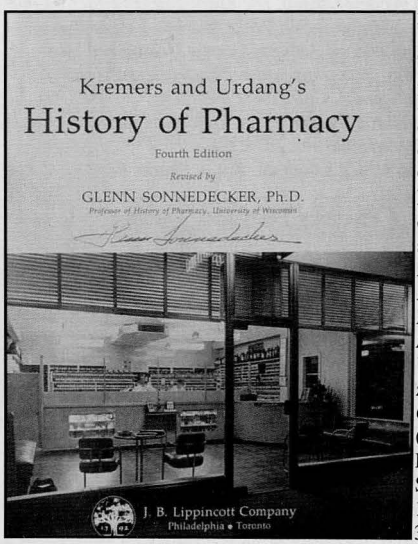

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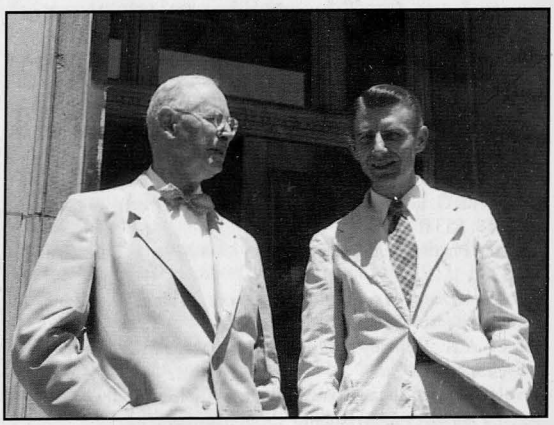

Figure 8. George Urdang and Glenn Sonnedecker, (about 1952), G. Sonnedecker, Madison

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Author's address: Aurikelweg 126, 50259 Pulheim, Germany; Holger@Goetzendorff.de

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What's in a drawer

John Newstead

Norwich

In the cellar of an old chemist shop in Norwich, I found a wooden drawer from a drug run: at first I kicked it to one side but then I noticed some paper labels on the side of the drawer and decided to investigate further.

The mahogany-fronted drawer had lost part of its metal handle and the gold lettering of the label had been scratched off. On the outside of the pine wood drawer were the remains of plain paper chemist labels on which was written in ink '**Filled on ...**' followed by the date and the name of the person who had filled it (Figures 1 and 2).

Further investigation revealed that the persons filling the drawers were most probably apprentices as only two of the names appear on the register of The Pharmaceutical Society as qualified phamacists. These were brothers, Aubrey R Day and Eric R Day, both from Norwich who served their apprenticeships at the Smith pharmacy.[1] Aubrey Day filled the drawer in Feb 1919 and qualified as a pharmacist in June 1924 and his brother Eric filled the drawer in Jan 1923, qualifying in 1928. Aubrey Day was still the pharmacist in charge in 1960, when I returned to Norwich, and the retail pharmacy side of the business closed a few years later.

The intervals between the dates were spread over the years 1859 to 1929 on the labels that were readable, so one wonders what was so important about the contents of this particular drawer, especially when no other drawer in the drug run had any such labels. Whatever it was, it was certainly clean , for inside the bottom of the drawer was attached a piece of newspaper, which was still readable.

Figure 1. The drawer.

Even more intriguing were the contents of the newspaper article dated Tuesday March 10th 1863, which was a report of court proceedings. One article was of particular interest:

'Charles Witney, 19, and John Potter, 20, were indicted for stealing 71b weight and upwards of lead, the property of William S Tysssen Amherst, and fixed to a building. Daniel Luff, police constable, said about a quarter past eight in the evening of the seventh of February he saw the prisoners together in Railway Place, Kingsland, about 300 yards from William Street, from which direction they had come. He stopped them, and took hold of Whitney, upon which Potter ran away. He had something bulky about his waist under his clothing, and on Whitney he found 7lb lead (produced) round his waist under his guernsey frock. He said he had found it, but he declined to say where. Witness had fitted the lead to a gutter on the roof of an unoccupied house, No 13 William Street, Kingsland, and from where the whole of the lead gutter was gone. The lead produced exactly fitted the gutter.

Figure 2. The labels.

Mr John Parnell, of No 10 Duke's Court, Bow Street, rent-collector, said the house, No 13 William Street was the property of Mr Amherst. The jury found the prisoner Guilty.

Thomas Hook, police constable, said he was present at Clerkenwell Police-court on the 12th of July last, when the prisoner was convicted of felony, and sentenced to six months imprisonment. He had also been convicted and sentenced to six months imprisonment previous to that.

Mr Payne sentenced him to be kept in penal servitude for four years.'

The drawer is in the collection at The Bridewell Museum in Norwich.

Author's address: Galen Lodge, 28 Ringland Road, Taverham, Norwich NR8 6TG.

Endnote

1. Smith & Sons Norwich Ltd, 44-48 Magdalen Street Norwich. First recorded as a chemist shop in 1790, owned by a Mr Richard Smith, whose son Joseph was apprenticed in 1801 to Mr Chambers in the Market Place. The company was registered with the PSGB in April 1884 and as a Limited Company in March 1932 at the same address. The pharmacy closed in the1960s.

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Review

From Physick to Pharmacology: Five Hundred Years of Drug Retailing

Ed. Louise Hill Curth. Ashgate Publishing Ltd, 2006. Price £50.00. ISBN: 0-7546-3597-X

This thoroughly enjoyable book is part of a multidisciplinary series that examines 'The History of Retailing and Consumption'. In terms of pharmacy history, it covers new ground in many areas and provides an insightful overview of existing material in others. Louise Hill Curth in her introduction admits that the book, as a single volume, cannot serve as a general guide to the subject, and it is true that the differing styles and approaches of each chapter mean that it feels like an anthology under this wide theme. Curth describes the book's aim as 'to illustrate the common thread of the relationship between medicinal beliefs, treatment and society.' This common thread, the retailing process, is admitted by all of the authors to be extremely complex, and the way that the subject is conquered by each is admirable.

In terms of the book's intended audience, it seems to fall on the side of explaining pharmacy to the business historian rather than the other way around. If this was the intention, the fact that pharmaceutical Latin abbreviations are not translated for the non-specialist reader in a couple of places is a little irritating. However, one of the other common threads throughout the book that will appeal to both readerships is the exploitation of as broad a range of types of historical evidence as possible – formal and business records, almanacs, advertising, legal documents including deeds and mortgages, oral history and all other manner of 'flotsam and jetsam of county records offices' as King describes it in his chapter.

Patrick Wallis's chapter, *Apothecaries and the Consumption and Retailing of Medicines in Early Modern London*, provides a thorough and entertaining examination of a complex network of supply and demand, using a wide range of sources and subject matter. His insights into retail practice and the experience of both the customer and the patient certainly provide encouragement to explore this period further.

The editor's own chapter, *Medical Advertising in the Popular Press*, is particularly interesting as an exploration of an overlooked source of evidence, almanacs, and an earlier period of time than is often considered. As Curth points out, it is usual for the eighteenth century to be seen as the beginnings of a consumer revolution that included medicine, but both hers and Wallis's chapter provide strong evidence to consider the origins in the 1600s.

Steven King's chapter concentrates on *Accessing Drugs in the Eighteenth-Century Regions* and as such presents a fascinating examination of the dynamics affecting the retailing of medicines in Lancashire and Northamptonshire in the 1700s. The regional focus in this and the following chapter is a refreshing change to the usual London-based account or national overview. This chapter presents an excellently disaggregated account, for example comparing urban and rural populations within the regions or how access to medical expertise differed between groups of varying faiths. King's call at the end of the chapter for further regional research to counter the national picture could perhaps be answered by BSHP members with an interest in their local scene, to enable comparison of composition, pricing or dosage between regions in this and other periods.

Hilary Marland again concentrates on a regional study with a detailed focus on Wakefield and Huddersfield in the nineteenth century in her chapter entitled *The Doctor's Shop*. Her exploration of the attitude towards pharmacists and how they fitted into the general medical landscape of qualified and unqualified practitioners is particularly enjoyable.

Stuart Anderson's chapter, *From 'Bespoke' to 'Off the Peg'*, covers a national history during the period between 1900 and 1970 and therefore is often painted with much broader brushstrokes. Anderson considers a vast array of factors that have affected drugs retailing in the twentieth century including social class and changing dosage types as well as legislation and regulation. His impressive analysis of the overarching story is countered with an excellent use of personal accounts, primarily from oral history interviews, that add individual voices as illustration of his wider points.

Judy Slinn's chapter investigates *A Cascade of Medicine: The Marketing and Consumption of Prescription Drugs in the UK 1948-2000* and so brings the story up to date. As might be expected from both the author and the period covered, the content concentrates predominantly on the industry viewpoint. The interplay between British developments and those in the USA are also well explained.

Any criticism of the book is only minor. One small point is that the American spelling of words such as 'organization' did jar in a book about British drug retailing. It is also a significant missed opportunity that there are no images in the book at all. Packaging, advertising and products mentioned in the text could have been illustrated to add an element of visual interest, and pictures of historical objects would have added another layer of evidence to consider – delftware jars in Wallis's chapter, for example.

Nevertheless, the book would be a very welcome addition to the pharmacy historian's bookshelf. Its argument that medicines need particularly adept analysis and cannot be considered in the same way as other commodities is neatly demonstrated by all the authors.

Briony Hudson

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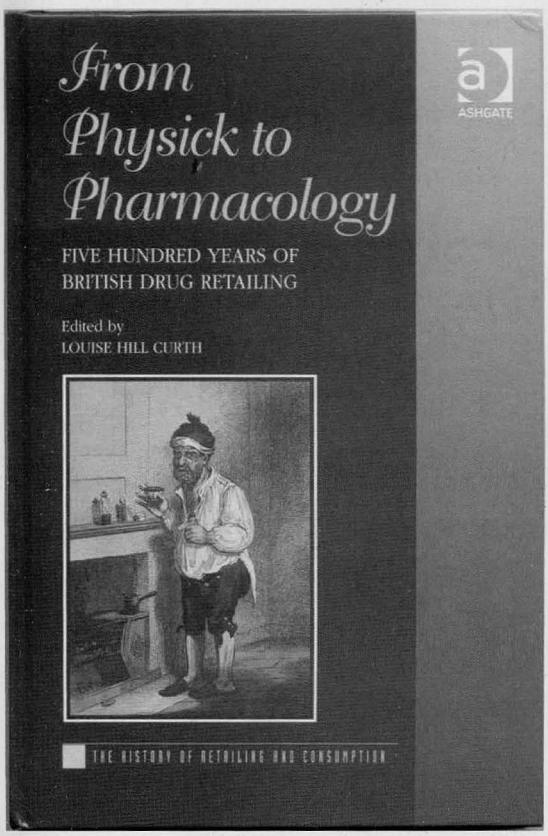
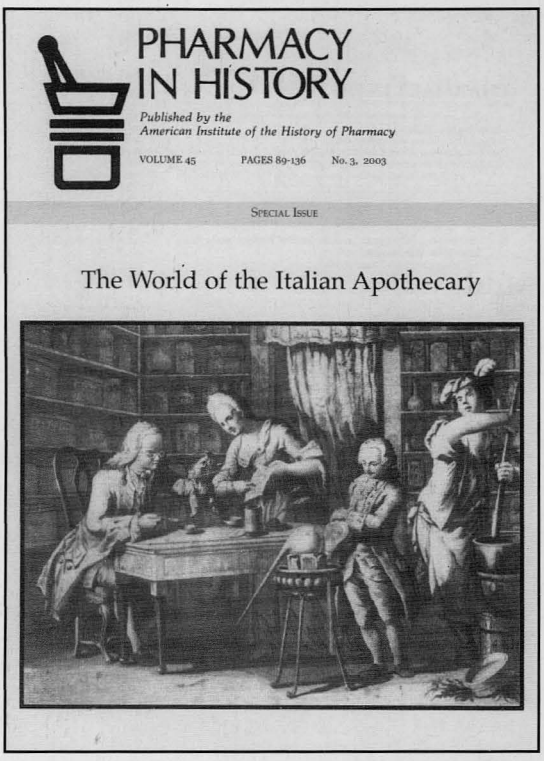


Cover of *From Physick to Pharmacology: Five Hundred Years of Drug Retailing*. Reviewed on p. 16 opposite.

Label for 'Sun Cholera Mixture' from A.F. Russell & Co., Druggists, Depot Square, Tuckahoe, New York. From the collection of L.G. Matthews



Special Issue of *Pharmacy in History* 2003 (see p. 11), journal of the American Institute of the History of Pharmacy

Rennebohm Hall, current home of the American Institute of the History of Pharmacy and the Kremers Reference File (2004), Madison, Wisconsin

I presume this Account has escaped your notice; may I ask the favor of an early remittance?

Polite reminder notice from W.N. Creasy pharmacy, Bronxville, New York, 1970 . From the collection of L.G. Matthews

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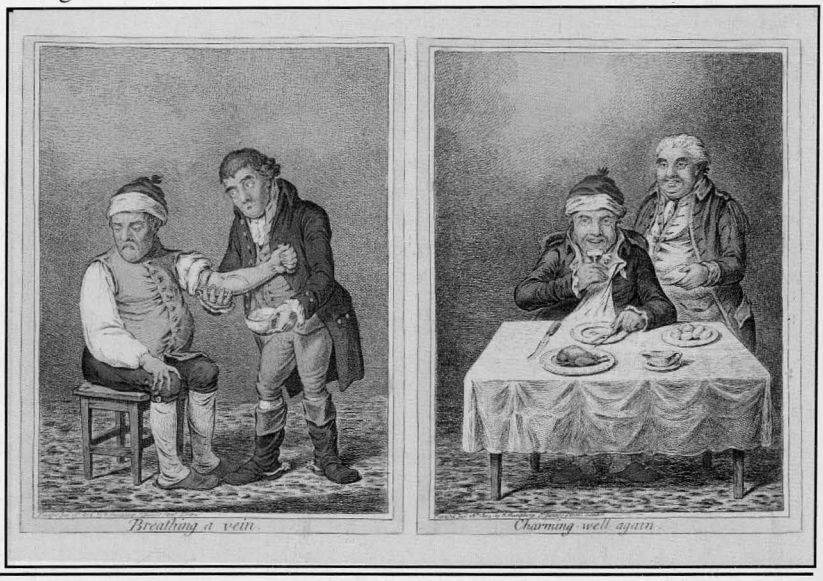
Coloured postcards and greeting cards from the Museum

Two of the range of 24 postcards and 4 greeting cards on sale on behalf of the Museum from the Library issue desk at 1 Lambeth High Street. All the cards show images or objects from the Museum's fine collections. Reproduced with permission.

Above: R.J. Mellowes pharmacy in Enfield, Middlesex, 1959. Posed with wife and son for the PSGB's photographer. Below: Two images drawn by Revd John Sneyd and etched by Gillray, 1804. Left: 'Breathing a vein' and right: 'Charming well again'.



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Fortieth Anniversary of the Foundation of the British Society for the History of Pharmacy 14th June 1967

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Advancement of knowledge and propagation of understanding of the history of pharmacy.
Publication of the research work of pharmaceutical historians.
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Diary

Wednesday 10 October 2007
'The History of Pharmacy Education' by Michael Jepson. Lambeth

Wednesday 14 November 2007
'Pharmacy, Quackery and the Growth of Medicine in early modern England' by Patrick Wallis. Lambeth 6.30 p.m.

22nd Congress of British Society for the History of Medicine, Wednesday 5 September – Saturday 8 September 2007 See *www.hawgood.co.uk/bshm/congress.htm*
To be held at West Park Centre, University of Dundee, Scotland.

Dates of future meetings 2008
Wednesdays 13 February, 7 May, 24 September, 19 November.

President At its May meeting the Committee elected Dr Michael H Jepson as President and Mr Ainley Wade as Vice-president.

38th International Congress for the History of Pharmacy
19-22 September 2007, Seville, Spain
'Drugs and medicines from both sides of the Atlantic Ocean'

To be held in NH Central Convenciones Hotel, Seville. Further details of registration and hotel bookings can be found on the Congress website, see *www.38ichp.org* or *www.govi.de/8_2007.pdf* for forms.

We report with regret the death of **Charles C Lofthouse** on 18 April. He served as auditor for BSHP from 1996 and was a regular attender at the Society's Spring Conferences.

Sydney WF Holloway, the historian and author of the history of the Pharmaceutical Society 1841-1991, has been presented with the Synergy Award by the President, Mr Hemant Patel.

Note: The Annual Report for 2006 sent out recently was erroneously headed the thirty-eighth annual report. It was the *Thirty-ninth* annual report.

BSHP logo 40 years on

The BSHP has used this woodcut as its logo from

the first issue of the *Pharmaceutical Historian* in 1967, but knowledge of its source had been lost for some years. A secondary source has now been found for: *Meister Stephans Schachbuch. Ein mittelniederdeutsches Gedicht des vierzehnten Jahrhunderts.* Printed at Lübeck c. 1480. A version of the work of Cessolis. Edited with a glossary by W. Schlueter, 1883. (From the British Library catalogue.) It is not known how the woodcut was chosen. It shows a doctor or apothecary with a book placing a handful of an ingredient into a mortar.

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The founding of the British Society for the History of Pharmacy 40 years ago

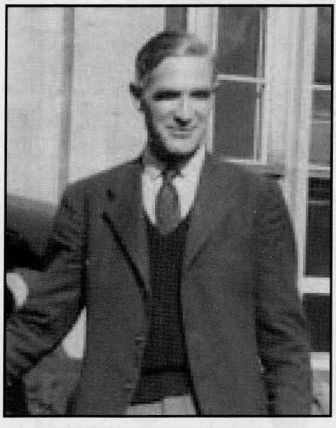
Ainley Wade

Editor, *Pharmaceutical Historian*

Forty years ago I had been working for the Pharmaceutical Society for 18 months as an editorial assistant in the Department of Pharmaceutical Sciences, producing the 25th edition of *Martindale: the Extra Pharmacopoeia*. The editor was Robert Todd and we often discussed historical subjects as he had a huge depth of knowledge. As we finished the 25th edition and sent the index off to the printer, I didn't know what would happen next.

One day in December 1966 he said that the Society's History of Pharmacy Committee needed a new secretary as John Stanton, an administrative assistant, was leaving to work for May & Baker. 'They' had decided that I was suitable and would I do it? It was only part-time, taking Minutes of the meetings of the Committee and circulating them. It shouldn't take much of my time from *Martindale*, and working with a committee would be good experience. I could see that, as the Society's other scientific books, like the *BNF* and *British Pharmaceutical Codex* were run by committees, whereas *Martindale* was run by the Editor and a team, who made the decisions.

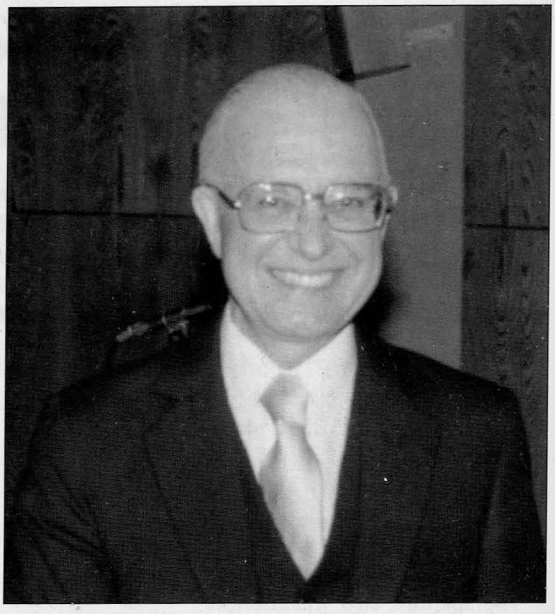
So I agreed with some trepidation: I considered myself a scientist and interested in books, with much to learn about publishing, rather than a pharmaceutical administrator. Soon I was called to see Frank Adams, Secretary and Registrar, who was a remote and august figure in my eyes.



Frank W Adams, Secretary and Registrar

He told me to be ready to meet the committee chairman after the January Council meeting. I was duly called by Adams to see the chairman, James (Jimmy) Bloomfield, then in the second year of office as President 1965-67. Bloomfield was a friendly man and we got on well.

Like most presidents, whether Blair, Bush or Hemant Patel, he wanted to leave some tangible legacy behind him and he had decided that the Pharmaceutical Society needed a History Membership Group, similar to the recently formed Agricultural and Veterinary Group, to promote the history of pharmacy.



James C Bloomfield, President of PSGB 1965-67

History of Pharmacy Committee

The original idea of the BSHP can be traced back to the late 1930s. According to Leslie Matthews[1] a few interested persons tried to interest the Council of the PSGB in doing something to protect the history of pharmacy, but nothing had happened when the war started in 1939. The Society's centenary was

Leslie G Matthews

celebrated in 1941 and generated more interest in history. But again nothing happened until 1950 when historians led by EC Cripps again asked the Council for representation. Eventually the Council set up the History of Pharmacy Committee in 1952. The original Committee met on 16th August and consisted of: HB Bayles, EC Cripps, AJ Fairlee, WH Hampton, LG Matthews, E Saville Peck, GE Trease, and FC Wilson (Council member). FW Adams and Miss Agnes Lothian were in attendance. Dr Rowson, then a Society employee, was absent.

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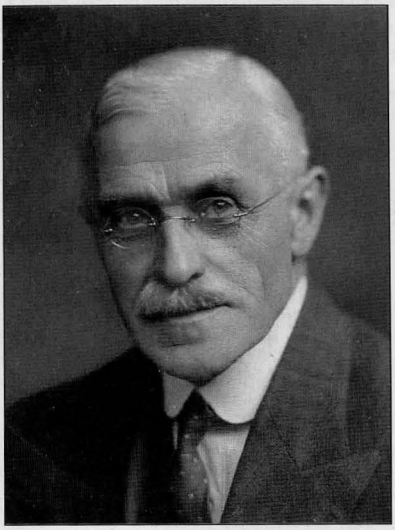
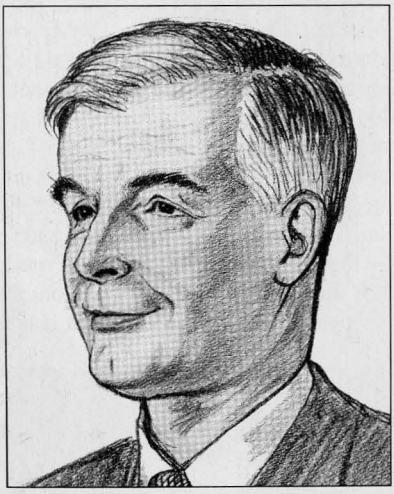
The Committee became very active and had as many as 60 branch correspondents who kept an eye on historical pharmacies in their area and helped to collect nearly 800 old proprietary medicines. They published 8 newsletters by 1964, boosted the



E Savile Peck

Miss Agnes Lothian



Prof. George E Trease as seen by the *Chemist and Druggist* in 1959

Prof. JM Rowson

Museum, helped to organise the 1965 International Congress in London and then relapsed, holding no meetings between May 1964 and January 1967.

The idea of a History Members Group seems to have grown in the early 1960s. The Society of Apothecaries had formed the Faculty of the History of Medicine and Pharmacy, and at its 4th Congress in Nottingham in 1963 the Chairman, Dr WS Copeman, had said that the suggestion of adding pharmacy to its remit had come from Sir Hugh Linstead (Joint Secretary of the Society).This caused a fuss and Sir Hugh said he had never advocated such an idea. Nobody knows now, but the Faculty declared that it was anxious to accommodate itself to the Society's wishes. So in February 1964 Sir Hugh proposed 3 alternatives:

1. continue unchanged;

2. form a Society for the History of Pharmacy and link it to the faculty, as the Royal College of Veterinary Surgeons had done;

3. form an independent Society for the History of Pharmacy.

After discussion they agreed to re-orientate the HoPC and recommended to the Council:

1. that the function of the HoPC be performed by a Society for the History of Pharmacy *under the aegis* of the Pharmaceutical Society, and regarded

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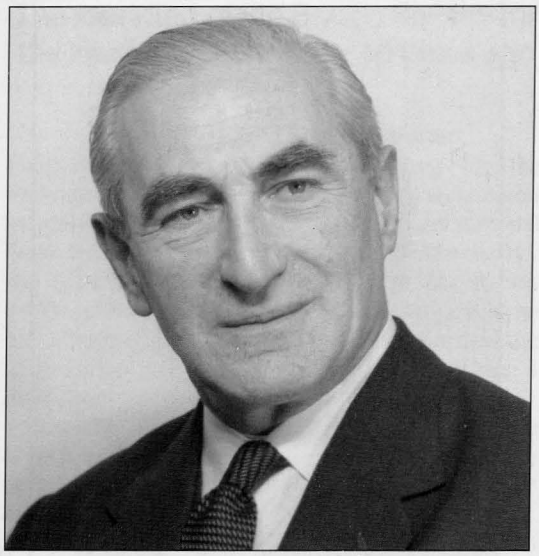


Sir Hugh Linstead MP

for the constitution as a membership group with a *special interest* in accordance with Section XVII of the Byelaws,

2. that enquiry be made regarding the possibility of the new Society for the History of Pharmacy being associated with the Faculty in an appropriate way.

At the next meeting in May 1964 the Secretary (Stanton) reported that the proposal was accepted by Council who asked for the Constitution of a Membership Group to be considered.

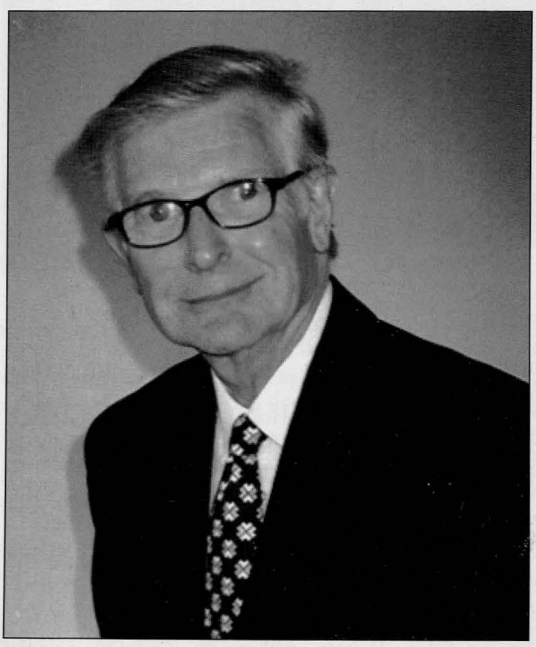
By the November 1964 meeting the Committee received the draft Constitution of a *Membership Group* agreed by Council, amended to make the President of the Group the President of the Pharmaceutical Society for the time being, with the Society giving office support and allowing affiliation to the Faculty. It was agreed that the new Group would be advertised in the *Pharmaceutical Journal*, inviting all those interested in history to join. After this progress the story goes cold and I have not yet found out why. I don't think the Group was ever advertised.

Dr Melvin P Earles

By 1964, the Committee comprised James Bloomfield (chairman since November 1958), Miss Burr, Chapman, Dr John Crellin, Dr Melvin Earles, Leslie Matthews, Agnes Lothian, Donald Sparshott, Prof. George Trease and Dr Douglas Whittet. (At this time Bloomfield was Vice-President, Burr an ex-President and Sparshott to become a later President.)

Of course, during 1965-66 Bloomfield became President, chaired the adjourned Annual Meeting in the Albert Hall, became embroiled in the Dickson case and carried on the general business of being President.

So the History of Pharmacy Committee of illustrious historians at last met again in January 1967



Dr John K Crellin

Dr T Douglas Whittet

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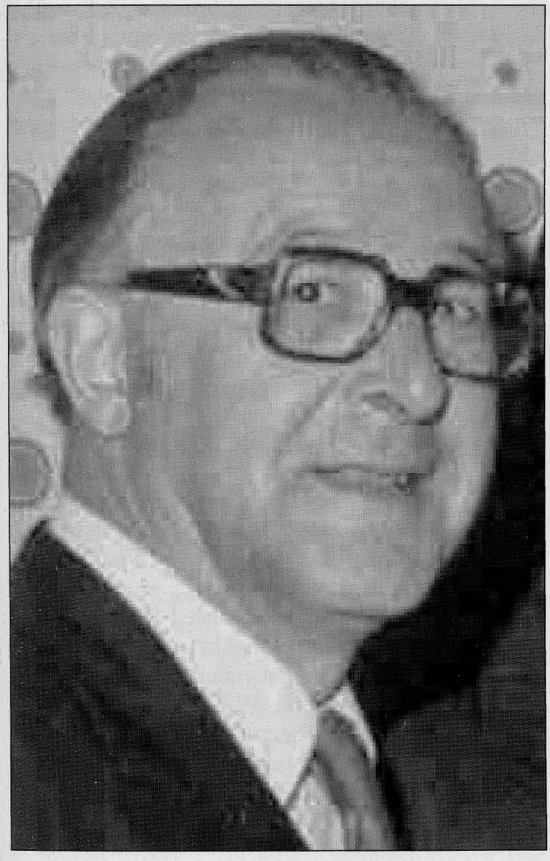
with its new inexperienced Secretary, and Desmond Lewis (soon to become Secretary and Registrar on Adams' retirement) came to keep an eye on me.

For the main business Lewis and Adams had prepared another draft constitution for discussion, similar to that of the PSGB, with annual elections of a third of members, election of officers from within the committee, etc.

An aside: After the first meeting I went to see Adams and Lewis with my draft minutes, the first I had ever written. I well remember Adams, with his 40 years' experience advising me on how to run a committee and how to deal with the President, who had chaired the famous Albert Hall meeting of July 1965.



Desmond F Lewis

As usual ,the minutes went to the next Council and amendments were suggested. The Constitution gradually evolved and we all looked forward to the formation of the History of Pharmacy Group.

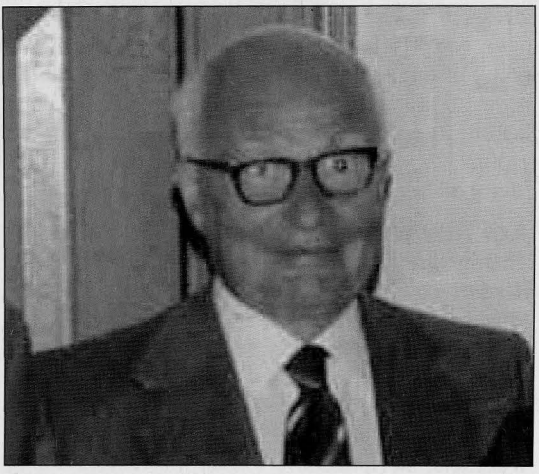
The more the Council discussed it, the more amendments were made until Adams called me to see Bloomfield, as the Council had rejected a Membership Group on the grounds that the Society couldn't fund the activities of medical historians and others who weren't pharmacists. So the Membership Group was dropped and the independent Society for the History of Pharmacy suggested in 1964 was revived. With very few changes the same constitution was used and it was agreed that the subtitle would say 'Founded under the aegis of the PSGB'. This was agreed and at the last draft the name was changed to the **British Society for the History of Pharmacy**. I was asked to call the meeting to found the new Society and put official notices in the *Pharmaceutical Journal* and *Chemist and Druggist*. As usual the meeting on 14 June 1967 was in the Society's Hall in Bloomsbury.

The Inaugural Meeting

I have always remembered how the inaugural meeting was organised. A new Society has no officers or leader. So Adams stood up and said that as the PSGB was the host he would call for a chairman to be nominated. Someone nominated James Bloomfield, who had the previous week passed the President's office to Alan Aldington, as well qualified to chair the meeting and it was readily agreed. The published draft constitution was questioned but agreed. An election for the first committee of nine took place and the old History of Pharmacy Committee effectively continued as the Inaugural Committee. It was decided that all those at the meeting and those paying 10s. within a month would become 'Founder Members'. There were about 60 founders, including several Council members. The list of members in September 1967 is reproduced on pp. 25-26. The Council then disbanded its own Committee. A small niggle was the Scottish History of Pharmacy Committee, led by Charles Drummond. I forgot to advise the Council to abolish it along with the HoPC and and with Charles Drummond's support it lingered on for a few years.

The early years of BSHP

I had already started work with Norman Blacow on the 26th edition of *Martindale*, so I thought I might be released from duty, but as it turned out I had to stay on as the administrative secretary to make arrangements for meetings, produce the minutes, enroll the new



Charles G Drummond

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members and take their membership fees, while John Crellin arranged the speakers and venues. At its first meeting James Bloomfield became the President of the new society, George Trease Vice-President, John Crellin Honorary Secretary and Leslie Matthews Treasurer. Melvin Earles was appointed to start a new journal and Nicholas Herdman agreed to start the newsletter (now the *Pharmaceutical Historian*). By June 1968 SF Woodward became editor of the newsletter. Before each Committee meeting, Bloomfield took John and me out to lunch at the Whitehall Hotel to discuss the business. After we had done anything for the BSHP he would write and thank us. He did this with everyone and every organisation. He must have written several letters every day, as well as running his business in Portsmouth.

Evening Meetings were fitted into the programme of scientific meetings as joint meetings with the Pharmaceutical Society and they continue to this day. For our first meeting outside London, William Boorman, Chief Pharmacist at Winchester Hospitals and a keen historian, arranged a Sunday meeting in Winchester. It was the first day meeting I had been involved in, and I remember little about it except that Martin Biddle talked about his archaeological investigations of the latrines of medieval Winchester and the medical conclusions drawn from the micro-organisms that were found in the residues.

I had some hairy experiences acting as projectionist at meetings in the absence of anyone more suitable, so I was pleased when Lewis, by now the Secretary and Registrar, appointed Miss Millward to his administrative staff and she took over from me in October 1968.

Who were the main forces behind the new BSHP? I guess one should mainly credit Matthews for the history and Bloomfield for the political will. For me personally, it was a great experience that brought me to the attention of Council members and the senior staff.

The future

Some unanswered questions remain. We never affiliated to the Faculty as proposed, though we have warm relations these days. The RPSGB is going through a government-inspired crisis: will it have to split in two, with the professional body leading a federation of affiliated special interest groups? Maybe we could revert to the idea of a Membership Group of the Society after all.

Acknowledgements

Thanks are due to Briony Hudson and Peter Homan of the Royal Pharmaceutical Society's Museum for assistance in finding illustrations and to Ann Lewis for permission to access the Minutes of the History of Pharmacy Committee.

This paper and the succeeding paper by Ann Hutton were presented at the BSHP Spring Conference, Wakefield, 1st April 2007.

Author's address: 6 Horseshoe Walk, Bath BA2 6DE; ainley.wade@easynet.co.uk

Endnotes and References

1. Matthews LG. The History of Pharmacy Committee of the Pharmaceutical Society 1952-1967. *Pharmaceutical Historian* 1976 (Dec); 6 (3): 3-4.

British Society for the History of Pharmacy: The First Forty Years

D Ann Hutton

Doncaster

The committee of the new fledgling society met immediately after the inaugural meeting to plan the first year's programme. Membership of the Society was expected to be small, but might eventually rise to between 200 and 250. The subscription was set at 10 shillings for the remaining six months, rising to £1 per annum from January 1968. The first list of members, dated September 28th 1967, numbered 98. By March 20th 1968, six months later, it had risen to 145. It was an accurate forecast: our numbers since then have been between 200 and 250. Of the original list, 13 of us are still members.

The Pharmaceutical Society gave the infant BSHP a grant of £300 for the first three years, reducing to £200, until, in 1974, the Committee were able to write to the Pharmaceutical Society saying, in view of their present state, BSHP were in a position to continue without financial assistance. In reply, the Pharmaceutical Society said they would consider sympathetically any request for assistance in any future difficulty.

At this point, I would like to acknowledge the help given to BSHP by the Pharmaceutical Society. As well as the grant, they provided valuable secretarial and organisational assistance. When Ainley Wade returned to his duties on *Martindale*, with the thanks of the Committee for his most generous help and time, Miss Millward was allocated to us for about two years. You may remember her successors, on the telephone or at our Spring Conferences: Mary Lakie, 1972-74; Linda Cameron, 1975-89 and Dr. Lindsay Howden, Assistant Secretary in the Scottish Department of the Pharmaceutical Society, 1984-99, with help in the office from Isobel Myatt, and Wilma MacDonald.

Mary, Linda and Lindsay were of course based at 36 York Place, Edinburgh, so our address was transferred there and remained there until 1999, when the Edinburgh Department was reorganised, Lindsay retired, and we became fully independent using a commercial secretariat in Leicester. We still enjoy good relations with the Pharmaceutical Society, holding at least one joint meeting with them every year, and using 1 Lambeth High Street for most of our evening lectures and committee meetings.

At the first committee meeting Jimmy Bloomfield was elected President, Professor Trease Vice President, John Crellin Secretary, and Leslie Matthews Treasurer. The other Committee members

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were Charles Drummond, Melvin Earles, Nicholas Herdman, Agnes Lothian Short, and Douglas Whittet. (The number of committee members was later increased from 9 to 12.)

The committee's plans were quickly carried out. The first evening meeting took place on October 11th, at 17 Bloomsbury Square, when Dr Marie Boas Hall, Reader in the History of Science and Technology at Imperial College, spoke on 'Apothecaries and Chemists of the 17th Century'. The first newsletter, entitled *Pharmaceutical Historian* was published that October, with a message from our President, and articles on 'The City of York's First Spicers, Grocers and Apothecaries' by Leslie Matthews, and 'Pharmacy in Stamford a Century Ago' by Rosemary Ellis of Leicester Royal Infirmary. The first meeting outside London was held the following month on November 11th, at Winchester. This was organised by William Boorman, Chief Pharmacist at the Royal Hants County Hospital. His investigations into the origin of the Winchester Quart had been published in the *Pharmaceutical Journal* in 1963. (Do young pharmacists know what a Winchester is?) As well as the striking paper on Winchester's medieval latrines, Mr Boorman contributed a paper on 'Local History and the Pharmacist', which was printed in the next issue of the *Pharmaceutical Historian.*

The first two issues of the *Historian* were edited by Nicholas Herdman. He set the style of the publication, and found the design which appears at the masthead, and became the Society's logo. This is a mediaeval apothecary with his book and mortar, and is taken from a woodcut in the *Schachbuch of Meister Stephan* of Lübeck, c. 1480. The *Pharmaceutical Historian* appeared spasmodically for the first couple of years. After two issues, Herdman retired, due to pressure of business. S F Woodward took over for the next two years, until Owen Waller, retired editor of the *Chemist and Druggist* took control for the fifth issue in 1970 and put it on to a more professional basis. He introduced the first illustrations in that issue, two pages of Agnes Lothian Short's Portraits, Paintings and Caricatures, and a photograph of the new President, Melvin Earles.

At the next committee meeting Owen asked if such inclusions would be acceptable in future issues. The Committee agreed that the illustrations added to the interest of the *Historian*, and should, be continued when appropriate. But it took another 36 years before we ventured into colour in the special issue of June 2006 with the main papers from the 37th International Congress for the History of Pharmacy, held in Edinburgh in 2005.

Waller died very suddenly in 1972, and we were able to persuade Arthur Wright, his successor at the *Chemist and Druggist*, to take over. The *Chemist and Druggist* was well known for its Annual Supplement, which included much historical material. In our early days, they gave the activities of our Society generous coverage. For example, Professor David Cowen's paper for BSHP on 'Liberty, Laissez-faire and Licensure in Britain received a two-third page spread, with leader comment and further reference to it in Xrayser's column on the new Medicines Bill, then before Parliament.

Arthur Wright remained Editor for the next 18 years, from May 1973 to June 1991, when Nita Burnby took over. She was joined by Ainley Wade in 1999 and he became editor from 2000.

Not everything appeared in the *Historian*: nothing on 'Winchester's latrines', no 'Hysterical Architecture' from the Bradford conference. The Editor was always constrained. by costs and space. The first issue had achieved a very respectable eight pages, but only four issues were published between October 1967 and March 1970. Thereafter Owen Waller and Arthur Wright produced regular issues three or four times a year, though occasionally in the 70s we could only fill six pages, and in 1974, the 'Winter of Discontent', one issue was seriously delayed because of the Emergency Power Regulations. (That was the time of the three-day working week, when we had to hurry home to cook supper before the electricity went off, and candles were in very short supply.) Golfball printers and electric typewriters instead of print were considered as possible economies in those pre-computer days. Eventually we sought sponsors: R Gordon Drummond Ltd. was first I think, allowing 12 pages, then Winpharm for several years from 1982, and Merrell Dow for a few years from 1988.

The *Historian* was seen as newsletter for the members, suitable for notes and short articles. But it was felt that there was a dearth of media in English for publishing longer original works on the history of pharmacy, and the *Transactions* were introduced to remedy this. The *Transactions* were to be devoted to papers deemed to make an original contribution to pharmaceutical history, conforming with good standards of historical scholarship. Dr Earles agreed to act as editor, and produced four issues between 1970 and 1977. These were:

1. A Rowe and GE Trease, 'Thomas Baskerville, Elizabethan Apothecary of Exeter'
   J Cule, 'The Diagnosis and Treatment of Leprosy in Wales and the Border in the Middle Ages'
2. Jane O'Hara May, 'Foods or Medicines: the relationship between foodstuffs and the materia medica from 16th to 19th century'
3. W Helfand, 'James Morrison and his Pills'
   JK Crellin, 'Dr James' Fever Powders'
4. Nita Burnby, 'Apprentice Records'
   TD Whittet and M Newbold, 'Some eminent Cambridge Apothecaries'

Several of these papers were based on those delivered at our evening meetings and conferences. Unfortunately, the high costs of a small print run and estimated sales made it impossible to continue the series, and all material for publication then appeared

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in the *Historian*. While reporting Foundation Lectures, evening meetings and conference papers, the *Historian* welcomed papers from members and outside historians. Over the years it included a considerable body of work from Leslie Matthews, Douglas Whittet, Bill Court, Melvin Earles, Nita Burnby and Bill Jackson. Many of the latter's contributions could be classified under one of his titles, 'Guaranteed to Cure, Inventions for Healing' in which he amazed and entertained us with the Heath Robinson-like contraptions of our pharmaceutical past. In the true spirit of scientific curiosity he put one of them to the test, the Neu-Vita Occuliser for frictional massage of the eyeball, with uncomfortable results.

Three or four evening meetings were arranged each year and for a time we had a popular series of meetings on Sunday afternoons, usually at Bloomsbury Square. These ceased when the Pharmaceutical Society moved to Lambeth in 1976. This move was not helpful to BSHP as attendances dropped. We lost the easy travel and ambience of Bloomsbury. In Bloomsbury there were regular attendances of over 70 and on one occasion over 200. This was for Robert Todd on 'Bloomsbury Square and Bloomsbury'. Another large audience was for Douglas Harrod on 'Chelsea Physic Garden', both in 1973.

Sir John Hanbury gave the first Foundation Lecture in 1978, and other eminent speakers included Sir John Vane, the charismatic Roy Porter, and several of our own distinguished members, including Douglas Whittet, Charles Drummond, Bill Court, Nita Burnby, Melvin Earles, and John Hunt.

Conferences

The major event of the Society's year is the Spring Conference. The first took place in Cardiff in 1968 at the University of Wales Institute of Science and Technology and was organised by Terry Turner. Around 30 attendees heard papers on 'Leprosy in Wales in the Middles Ages' (John Cule), 'Archives as a Source of Material' (Glamorgan County Archivist), '17th Century Domestic Medicine' (Dr G Harris), 'A Study in Local History and the Development of Pharmacy in Central Glamorgan' (J Richards), 'Theophilus Redwood' (F Thomas), 'Robert Drane' (T Turner and P Jenkins) and 'Apothecaries and Druggists of 18th Century Winchester' (W Boorman). There was a visit to the Welsh Folk Museum, a cocktail party, and accommodation at the Aberdare Hall of Residence. The whole cost per person was £4. 10s, plus £l conference fee. We had an enthusiastic report in the *Chemist and Druggist*, which ended:

> Now that a start has been made and complete success assured by the support of the Universities and the more than sympathetic interest of the local branch, I hope that a pattern has been set, and that other parts of the country will yield as rich an experience as did Cardiff.

This is our fortieth Spring Conference. They have always been very friendly affairs, held up and down the British Isles, geographically from Edinburgh to the Isle of Wight, alphabetically from Aldridge to York. We haven't visited Z yet - perhaps we could try Zeal Monachorum, or go from A to Z at Ashby de la Zouch. Many times we have called on local members' expertise, as we did at Cardiff. Our first prerequisite was an interesting programme, then an affordable venue, and possibly a beautiful location. The first we usually managed. Locations were often beautiful, sometimes more industrially interesting.

Accommodation was more of a problem. By 1975, the cost of the weekend in Edinburgh had increased to £17.50 per person at the Carlton Hotel, no suitable University accommodation being available. (I remember that conference for David Cowen's paper on the *Edinburgh Pharmacopoeia*, a talk which went on late into the night in the most comfortable corner of the bar - a typical feature of our conferences.

After the Chester Conference at the Queens Hotel the following year, the committee minuted:

> It it was agreed that the possibility of using University halls of residence for all future Conferences be investigated.

Agnes Lothian Short was not happy about this, but we used university and college facilities for the next six years. After Winchester in 1981, the Committee reported an excellent attendence, but unfortunately, the food and service were of such a poor standard that they hoped to get a refund. Warwick the next year was little better. There was rebellion in the ranks. We had had enough of primitive student facilities, draughty echoing corridors and communal bathrooms. (One university offered one shower between eight bedrooms – we turned that one down.)

After Porthcawl, the minutes noted 'How enjoyable it had been in an hotel.' The next year, at the Belfry Conference Centre, we offered rooms with ensuite bathroom, telephone, colour television and radio, tea and coffee making facilities – though it came at a price, £65.

We have had some memorable moments. At Greenwich, we commemorated the Pharmaceutical Society's sesquicentenary in 1991with a visit to 17 Bloomsbury Square, now the home of the German Institute. It was beautifully kept, but I missed the bustle of Headquarters, the laboratory smells drifting down the stairs, Agnes Lothian Short and Doris Jones in the Library. At Bristol, down in Harvey's cellars, we sampled various sherrys in their museum. Dare I mention Matlock, when a Danish film of old dispensing techniques was found to have had snatches of a late night film recorded over it by someone's grandchildren, or the occasion when the slide projector went mad and erupted in a fountain of slides? Bill Jackson had just started his talk on 'Black and white Cheshire houses'. As you would expect from Bill, he seemed quite unfazed by this and carried on with a memorable presentation.

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Of all our meetings, lectures and events, one of my own favourites was the address given by Dr Norman Heatley at Reading, in 1993, on his 'Personal Experiences in the Development of Penicillin'. Dr Heatley was one of the small team which developed penicillin at the Sir William Dunn School of Pathology in Oxford, where he was a research associate of Sir Howard Florey. He developed the assay method and unit of activity, and devised the flat, rectangular ceramic vessel (its design based on the hospital bedpan) for culturing the penicillin mould. Dr Heatley brought along some of the actual apparatus used, and presented us with one of the original ceramic culture flasks, which we persuaded him to sign.

I can report no exciting scandals or Dastardly Deeds in BSHP. There was the time when four of us accidently lost Leslie Matthews in Paris. There was a little frisson in the late eighties, when the newly formed Wellcome Unit for the History of Medicine at Glasgow University started to use our logo on their notepaper and adverts. After some polite correspondence, the crisis was resolved when Wellcome withdrew their funding from the unit and it ceased to exist. We sent a letter sympathising with their plight, but I think we were secretly relieved to avoid possible confrontation. The words 'Established 1967' were promptly added to our title, to assert our prior claim.

The aims and objectives of the Society, first laid down by the History of Pharmacy Committee, and adopted at the inaugural meeting were:

1. To develop an interest in the history of pharmacy
2. To provide facilities for recording and publishing information
3. To encourage the preservation of artefacts, records and documents connected with pharmacy
4. To arrange regular lectures, demonstrations and visits
5. To work with other bodies, associations and individuals with similar interests.

(These now appear in an extended form in each issue of the *Historian*.) And for the last 40 years the Society has carried out these aims.

The core of the Society's purpose, and its primary resource, is the membership of the Society. Jimmy Bloomfield, in his opening message in the first *Pharmaceutical Historian*, said 'The strength of our Society ... will never be measured in numbers but in the contributions which we make individually to the advancement of knowledge of the history of our calling.'

It might be appropriate in this anniversary year, to ask you, the members, how you would like the Society to improve and expand in the future.

This paper was presented at the 40th Annual Spring Conference, Wakefield, 1 April 2007.

D Ann Hutton was a founder member, an early member of the committee, and President 1978-80.

Author's address: Hawthorne House, Hatfield, Doncaster DN 7 6SB

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Reductionist Trends in Eighteenth-Century Therapeutics: a discussion on two medical/ pharmaceutical manuscripts[1]

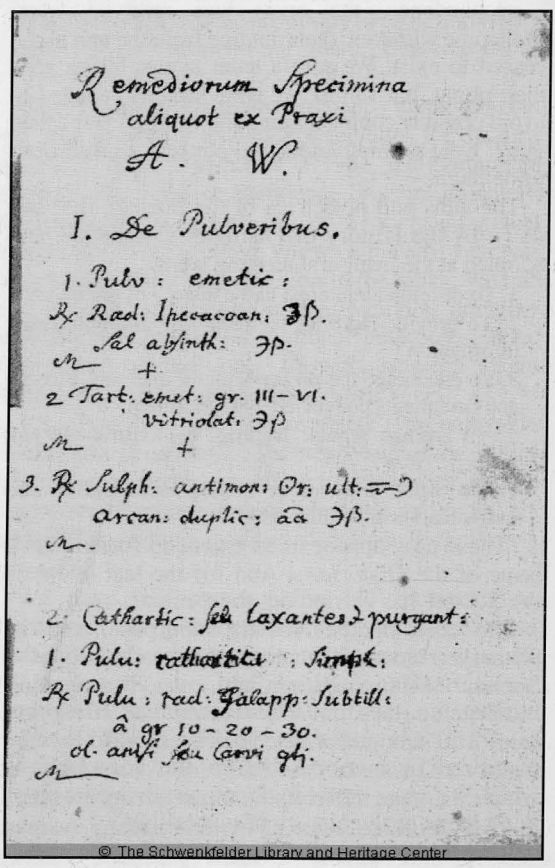
John K. Crellin

Introduction

The dubbing of the eighteenth century as 'the era of Enlightenment' encourages assumptions that it was a cohesive period of increasingly rational thinking. In fact, health care at the time was just one arena of tensions and contradictions. It was an intellectually challenging time of conservatism meeting change over new theories of disease, new approaches to evaluating the effects of medicines, new approaches in medical education, new hospitals and a constant exchange of clinical experiences.[2]

Amid such a scene, trying to understand the thinking of individual practitioners that shaped their everyday medical practice and prescribing habits is generally difficult as few offered reflective comments on, for instance, four somewhat overlapping matters: (i) how they viewed current efforts at medical 'reform'; (ii) their attitudes towards trends in treatment, especially the shift from complex to simpler prescriptions; (iii) their authority with patients and the extent to which it depended on abilities to diagnose and prescribe effective treatments; and (iv) how they dealt with (or ignored) the various theories of disease that spanned a range of concepts from chemical to mechanical to vital spirits. For some, the latter also embraced the soul that allowed the embodiment of God.[3]

Abraham Wagner (1715-1763) is one who did not comment on such matters in his medical manuscript (commenced c. 1743) that is now available on the World Wide Web.[4] Interpreting his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I. De Pulveribus.
1. Pulv: emetic:
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2 Tart: emet: gr. III–VI.
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3. ℞ Sulph: antimon: Or: ult: ℈ß
arcan: duplic: ää ℥ß.
2. Cathartic: seu Laxantes & purgant:
1. Pulu: cathartici: Simpl:
℞ Pulu: rad: Jalapp: Subtill:
ä gr 10–20–30.
ol. anisi seu Carui gtj.
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A page from the Wagner manuscript

thinking – akin to a detective hunt that finds only circumstantial evidence – is all the more interesting in so far as we have a European immigrant medical practitioner with deep religious convictions in colonial Pennsylvania. It was a land both welcoming and foreign with different intellectual

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and social structures that could both foster and limit the development of new ideas. The question asked by many historians is how did ideas and practices that were transmitted across the Atlantic fare in the new soil?

Elsewhere, in writings designed to prompt discussion on the Wagner manuscript, I have focused particularly on four features: (i) the influence on Wagner of the renowned German physician and teacher Georg Ernst Stahl, who promoted a theory of health and disease based on the concept of anima associated with the soul (a vitalist concept); (ii) the medical influence of three Schwenkfelder practitioners on Wagner; (iii) the importance Wagner attached to his clinical observations; and (iv) his accommodating new treatments with the old.[5]

In this discussion on the Wagner manuscript, I will be comparing it – at least selected features – with a manuscript compiled by George de Benneville, also available on the same website as Wagner's.[4] I will be spotlighting differences to highlight the question, Does Wagner's manuscript represent what nowadays is called, somewhat awkwardly, reductionism in medicine, at least does it show some reductionist trends? If so, to what extent does it reflect Wagner's everyday medical practice?

The term reductionism, increasingly evident in recent years, has been used in various ways. Generally it is understood as viewing a disease as a purely biological phenomenon (chemical, physical, and mechanical in various degrees) in ways that take attention away from less tangible factors such as whether a person's mind or spirit is a part of their disease. Indeed, from the seventeenth century onward, the concept has embraced the secularization of medicine —leaving God out of medical explanations along with magical/superstitious beliefs. Another way of phrasing this is to assume the body can be understood in terms of its isolated parts, in contrast to a 'holistic' view that an organism is more than the sum of its parts. It is noteworthy that such differing views about the relationships of the whole to its parts have threaded the long history of western medicine as has the integral issue of whether a treatment has a general or more local action on the body. The term reductionism is also commonly viewed as a benchmark of the scientific method, as a research strategy to isolate and investigate separately the many variables in, say, a biological system. However, many argue, this does not mean scientists have no appreciation that the whole can be more than the sum of the parts. In suggesting that Wagner's therapeutics opens a discussion on specific actions of medications and on limiting variables when evaluating them, I will also consider whether the manuscript is likely to reflect his everyday medical practice.

I must make clear that the Wagner manuscript, probably commenced around 1743, is open to different interpretations about how far it represents Wagner's practice and his approach to patients. The manuscript is not a medical case book, a medical diary, or even a commonplace book of medical notes and jottings. Thus, despite many references to medical experiences, the manuscript provides no information about the extent of Wagner's medical practice or day-by-day experiences on which it was based. Indeed, just why the manuscript was written is open to debate. It is in fact unfinished in places with headings without any notes, while further uncertainties arise from different handwritings and by apparent errors in the collation of the pages when they were bound.

The most likely explanation for the compilation, which comprises pages of prescription formulae (powders, elixirs, pills, etc) and of treatments for various conditions, is that Wagner intended to distil and pass on his experiences and knowledge (including favourite formulae) to an apprentice, or to a successor in his practice. Whether the latter was his younger brother, Melchior Wagner (born 1725), has not been determined, but the absence of certain details necessary to prepare many formulae almost suggests that he was expecting his experiences to be read by someone familiar with his practice.

Influences on Wagner and trends to simpler formulations

Adding to the difficulties in developing a picture of Wagner's approach to patients is his lack of comment on what he assimilated, melded, or rejected from the practices of his medical teachers and peers, or on how his spiritual life shaped his practice. He was a member of a persecuted Protestant sect, the Schwenkfelders, and his undoubted spirituality found expression in verse, dialogues, and charity.[6] It is noteworthy that he was seemingly known locally in his region of Pennsylvania as 'the Schwenkfelder doctor,' although it cannot be said whether this reflected his medical reputation, his association with the small religious group, or even idiosyncrasies.[7] Certainly a key part of his medical education was the influence of three members of the Schwenkfelder community centred in Harpersdorf, the agricultural village of Wagner's birth in lower Silesia.

Of these Schwenkfelders – Martin John the Younger (1624-1707), Georg Hauptmann (1635-1722, Wagner's great grandfather), and Melchior Hübner (1668-1738) – it was the latter (a one-time apprentice to John) who was Wagner's primary medical mentor, likely as an apprenticeship-master (no evidence has been found of Wagner receiving formal medical education at a university). This was at a time when the Schwenkfelder community faced difficult times through religious persecution from Jesuits, which, beginning in 1719, ultimately led to the migration to Pennsylvania. Wagner arrived in 1737, and stayed with Hübner, who had preceded him. On the latter's death in the following year, Wagner took over his medical practice at Faulkner Swamp, before moving elsewhere to a farm he acquired.

Important among other influences on Wagner was the medical thinking that surrounded or emanated from Georg Ernst Stahl (1660-1734). Direct and indirect indications of Stahl's influence included Wagner's references not only to Stahlian concepts, but also to each of three followers of Stahl (Samuel Carl, Johann Juncker, and Gottfried Rothe) as well as the commercial medicines produced at the Halle Orphanage in Germany.[8] I have suggested in previous

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discussions that Stahlian influences fostered Wagner's use of various relatively simple formulations or, at least not unduly complex ones, adding to influences from Schwenkfelder mentors.

The simpler remedies of the Schwenkfelders did not mean they refrained from some multiple ingredient or polypharmaceutical preparations, just as did Wagner. I have also discussed Wagner's use of the celebrated polypharmaceutical, theriac, or rather theriacs (various formulae existed), known since classical times as a virtual panacea especially for poisons and pestilences. It is of special interest that behind Wagner's use, at least in part, of specific theriacs was his evident concern with ensuring consistent quality of his medicines, which he evidently recognized as essential for evaluating their clinical effectiveness. At a time when the quality of both the materia medica and of compounded medicines was determined more through assessment of sensory properties and of standardizing ways of preparation – rather than the much later analytical approaches to quality control – consistency in preparing medications was clearly of great importance, especially in trying to evaluate efficacy. With theriacs, for instance, difficulties existed in ensuring even distribution of a key ingredient, opium, throughout the thick, unctuous preparations.[9]

The enigmatic de Benneville manuscript and disease theories

The de Benneville manuscript offers many intriguing contrasts to Wagner's, all the more so as the two practitioners were virtual neighbours and seemingly well acquainted. In one place Wagner, in discussing the treatment of 'pleurisy,' wrote:

> Those with rich blood or accustomed to be bled I permitted to have a venesection at the very beginning, which showed good results, in particular at the foot.

Another Christian practitioner in Oley observed this as well.'[10] This practitioner was undoubtedly de Benneville.[11] The link between the two is perhaps also reflected in a de Benneville formula for the complex remedy Panchymagogum written into the Wagner manuscript.[12] Dated 1781 (hence added after Wagner's death), it was noted as of 'Dr. Benneville' and to be a 'purge which cleanses all sorts of humors.' This comment about an undoubtedly vigorous treatment – five out of seven ingredients had marked laxative action: black hellebore, jalap, and rhubarb plus aloes and senna leaves – supports its reputation up to the early eighteenth century or so, by which time the term humors was more generally applied to bodily discharges, rather than to the classical notion of accounting for disease on imbalances between the humors.

Before commenting further on the Panchymagogum preparation, a reflection of continuing polypharmacy in the 1700s, I need to introduce George de Benneville and some key features of his manuscript prior to indicating how the contrasts between it and the Wagner manuscript raise questions about reductionist trends.

De Benneville was born in London in 1703 of Huguenot descent.[13] After having spent much of his young adulthood as a religious refugee travelling in religious circles in Europe (as with Wagner no evidence has been found of any formal medical education), he arrived in Pennsylvania in 1740, joined the reborn and radical Christian circle around the influential printer Christopher Saur, and developed renown as a founding teacher of Universalism. His bilingual manuscript, probably written during the 1760s, is in German and English, some as translation, though the two parts are best seen as parallel texts.

In many ways, the purpose of the manuscript – its English title is 'The Medicina Pennsylvania or the Pennsylvanian Physician'– is even more puzzling than Wagner's. Although the title, the four-part arrangement, and the carefully prepared copy suggests a completed manuscript for a medical text written for physicians (a combined dispensatory and compendium of diseases), the possibility that extensive sections in the manuscript were more initial notes for further development must be considered. Some passages, one enigmatically signed 'George de Benneville Student in Physic,' were clearly taken from other sources.[14] Surprisingly, this was without any acknowledgement though they seemingly did incorporate de Benneville's own experiences. While only one formula in the manuscript is labelled as his own (unlike Wagner who identified many of his), perhaps others are reflected in one if not two indigenous American plants (senega and possibly ginseng) that came into conventional use during de Benneville's lifetime.[15] Perhaps the easiest, although of course not necessarily correct, explanation for the manuscript, is, as with Wagner, that it is an unfinished compilation written for those who followed him; maybe, as has been suggested, it was for bilingual staff at a Philadelphia pharmacy, though his physician son is an obvious possibility.[16]

One sharp contrast with the Wagner manuscript – and something of a surprise for historians of the eighteenth century – lies in de Benneville's section titled 'Table of Diseases Divided in Three Parts with the Principal Remedies Adapted to Each.' Two parts, (i) on 'Astralis or Astrabolismus' diseases and (ii) on 'Tartarous' diseases expound in a general way on disease concepts developed by the sixteenth-century physician, Paracelsus (1493-1541). Astralis diseases, associated with 'star-born poisons,' link the influence of the planets to the healthiness or otherwise of particular parts of the body. (For example, de Benneville noted: 'Jupiter, creates fevers, weakness in the kidneys, obstruction in the liver.' And Mars, 'an extreme, hot planet, creates delirium, fevers, spasma, diabetes.') Tartarous diseases, on the other hand, were those considered to result from a 'coagulated substance' (tartar) causing specific problems by being deposited in various parts of the body (e.g. stomach, kidney, etc.)[17]

Paracelsus' influence on medical thought and practice, beyond being a challenge to classical humoral doctrine, was far-reaching over many generations, despite his obscure, difficult-to-understand writings. These are a reflection of a rebellious wandering spirit who not only

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developed new theories of the cause of disease, but also new treatments using chemical remedies, astrological notions of the influence of the macrocosm on the body, considerations of spiritual forces, and much metaphysical thinking including views on a covenant between God and the physician. However, by the early eighteenth century, while echoes existed of early debates over Paracelsus' chemical views of disease and the promotion of chemical medicines (rather than many traditional herbal remedies), his disease theories were carrying little weight.

Puzzlement over de Benneville's notes on outdated theories – possibly he was attracted to them via Paracelsus' mystical and religious ideas as many Protestants had been in the past[19] – is increased by the sharply contrasting third part of his 'Table of Diseases' section. It has no title, but, in the 210 or so diseases/conditions mentioned, the focus is on treatments with no sense of theory beyond terminology that falls in line with other eighteenth-century medical literature describing obstructions (say of the liver and the lungs) and humors (e.g., watery humors, i.e., discharges), and putrefied serum, etc. Moreover, there are striking differences with respect to references to drastic purgation (see below) compared with those in the Paracelsian astralis and tartarous diseases sections; as was written about the tartarous diseases: 'the patients should not be purged nor bleed without necessity requires it, but [use] diaphoretic medicines and such as will create a gentle moistness.'[20]

Comparing the two manuscripts

Many differences exist between the manuscripts of the two immigrant physicians and I choose two to open some thoughts on reductionist tendencies in Wagner's writing: (i) use of purgatives (long a key part of medical care, not merely for constipation, but also in terms of cleansing and rebalancing humors), and (ii) references to folk medical beliefs.

(i) *Purgatives: polypharmaceutical and simple*

First, I return to the de Benneville Panchymagogum formula in Wagner's manuscript.[21] Judging from Part 3 of his 'Table of Diseases,' de Benneville often favoured Panchymagogum, as he incorporated it in a formula for Cathartic Pills[22] and in no less than eighteen regimens for a diverse range of conditions that covered 'ascites,' 'red speck in the face,' 'blind piles,' 'iliac passion or ringing in the intestines,' 'a fleshy web which covers the eye,' 'pains in the shoulder,' 'involuntary erection of the yard,' 'lameness in the hands and feet,' and 'a crooked vein.' As an example, the entry for the latter reads as follows:

> A crooked Vein [varicose veins], swelling with melancholy blood especially in the legs; A little dilatation in the veins where the blood runs in a kind of eddy and makes a knot upon the part. Take laxative and panacea, then tincture of antimony, panchymagogum three times a day, a teaspoon full at a time in a tea made of flax seed, ground ivy, and chamomile.[23]

I comment on two points in this entry. First, the directive 'take laxative and panacea.' This is especially noteworthy as it appears in fifteen of the eighteen regimens with Panchymagogum (which, as already said, was alone a drastic purgative), while the other three regimens include yet another laxative. In fact, in part 3 of his disease section, the same directive – to take laxative and purgative – occurs in no less than 80 percent or so of around 210 conditions; and in a number of the rest either laxative or panacea was recommended separately.[24]

The panacea – with a reputation as a vigorous emetic as well as laxative – was almost certainly a preparation of antimony long associated with Paracelsus' name, though, since it had become so widely used the link must have been tenuous for most practitioners. In his notes on preparing it – a time-consuming process beginning with crude antimony, nitre and common salt – de Benneville adds:

> This is a fine purge to work upwards and downwards. The dose from one to 12 grains to be taken in wine or in flax seeds tea.[25]

It is hard to escape the view that the frequency of recommendations for 'laxative and panacea' hints at practising by rote, though it is not inappropriate to mention that many of the conditions were what today we would consider to be chronic or psychological and just as resistant to treatment with medicines nowadays as in the past. We cannot say whether the contradictions in the manuscript were mirrored in de Benneville's practice of which we have only a few glimpses from patients – namely the use of a secret gold tincture and seemingly firm views about appropriate purgatives.[26]

In contrast, Wagner's manuscript reveals no obvious internal contradictions and he generally recommended a judicious use of purgatives often with references to relatively mild laxatives such as Glauber's salt (not even mentioned by de Benneville). Panacea is only noted once and then as a vomit, and no entries exist in Wagner's own hand to the vigorous Panchymagogum. Even Wagner's discussion on the treatment of constipation suggests, I believe, a conservative, or at least a prudent, approach, by a competent clinician who carefully evaluated the patient in choosing a treatment out of a large number of alternatives. An extensive quote is provided in an endnote[27] to illustrate his thinking about treating constipation and to offer a sense of a critical and reflective approach to his medical practice, one that was compatible with reductionist tendencies.

My second point for comment about de Benneville's 'crooked vein' treatment is the directive to take the tincture of antimony and panchymagogum in a 'tea made of flax seed, ground ivy and chamomile.' In fact this is just one example of innumerable de Benneville recommendations that call for administering a medicine in a tea (commonly a teaspoon dose of the extract, tincture, etc.) Some of the teas were clearly intended to contribute specifically to the therapy, whereas others were seemingly more as a vehicle for a medicine as an aid to palatability. In either case the de Benneville teas – some containing up to a dozen or so herbs – added considerably to the polypharmacy of his prescriptions.[28]

Again, the Wagner manuscript offers sharp contrasts. While a few of Wagner's formulae are recommended to be taken in a tea (sometimes this is unspecified, maybe china tea), he generally followed a simpler approach to formulation, namely incorporating the vehicle for the active medicine into the formula.[29]

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(ii) *Medical folk beliefs*

Another major contrast between the two manuscripts centres on what is now commonly called folk medicine. I have already wondered whether de Benneville might have found Paracelsus' mysticism and radical religious thinking as an entry point to Paracelsian medicine, and now I ask whether de Benneville had an openness, if not necessarily a general acceptance, of non-natural (magical/ astrological/ superstitious) beliefs about health and about treatments. Unlike Wagner, he noted popular beliefs that at the time – around the middle of the eighteenth century – had been or were being consciously removed from conventional medical teaching. Although de Benneville's notes can be read as suggesting he felt the beliefs had some validity, it is, of course, possible that they may have been recorded as a reminder of the beliefs of the common people, or merely excerpted from an unidentified author.

De Benneville's 'Appendix or Guide for Women's and Children's Diseases' is of particular interest. He provides discursive notes on pregnancy and obstetrics covering, for example, 'hard labour,' 'of inflammation of the womb,' of the 'flux of the womb,' as well as 'ways of determining sex of the unborn child.' Perhaps, like the notes on Paracelsian disease concepts, this was excerpted from another author although I cannot make any suggestion about the source. Examples of popular beliefs mentioned are:

1. Under the heading 'imperfect children,' de Benneville records the effects of imagination and fear during pregnancy as a cause of birth marks or more serious disabilities. For instance, the woman who 'by beholding either such monsters or such pictures, and that is the reason they say that a woman having the picture of a black moor, she being with child, brought forth a black moor.' De Benneville mentioned two other women, one whose child was covered with 'hair like a camel because she was so superstitiously wise to kneel every day to the picture of John the Baptist cloathed in camel's hair.' The second bore a child with two thumbs on each hand after the mother had, during pregnancy, seen a boy with the same disability. De Benneville, however, goes on to say that the 'greatest cause I think' is the act of copulation when the woman has her menses upon her, while God forbade a man not to touch a woman at such a time.[30]

2. De Benneville's reference to treating a mole on a new-born child by immediately rubbing it with the warm afterbirth – a practice since widely reported as a folk cure – is an example of the well-known belief of removal of a disease by transference. He added, 'if this is not done, try the following. When any one of the child's blood relations dies, take the hand and stroke it over the mole once or twice.' Interestingly, this is followed by a prescription to be applied to a mole, which would seem to be, from the point of view of 'official' medicine, a more conventional approach.[31]

Elsewhere in the manuscript, a few remedies incorporate or refer to animal parts, many of which have come to be viewed as folk cures. For instance, curing by 'transference' of disease appears for a snakebite. It is stated, along with internal treatments (including 'laxative and panacea'), 'if you can catch her [the snake], cut [it] in pieces and apply them to the wound one by one, which will draw out the poison.' Elsewhere, a paronychia is noted to be placed in the 'ear of a cat.'[32]

Observations and comments

Although, as said, such beliefs were disappearing from conventional medicine – to which I might add that innumerable animal parts had been expunged from pharmacopoeias – the de Benneville references to popular beliefs can be interpreted as an illustration of a continuing permeable boundary that existed. If, in fact, he had any uncertainties about their value, at least as first line treatments, Wagner must have appreciated the confidence his Schwenkfelder mentors and others had in them. Moreover, consideration had always to be given to a patient's confidence in long-standing remedies, while there was no point in discarding the old unless newer remedies were, to his satisfaction, demonstrated as being superior either as first or second between conventional and lay medicine, particularly herbs. The permeability, in part because of a pervasive acceptance of magical beliefs, was, however, uneven in society.[33] It was certainly inconsistent among practitioners, and is hardly evident in the Wagner manuscript. None of de Benneville's 'folk beliefs' appear in Wagner's coverage of women's or other conditions, although Wagner did mention twice the use of herbs by the 'common' people. For instance, those who 'use only tea of Alexander which has helped many.'[34] Maybe that encouraged his own use of the tea, at least as a vehicle for his Anti-emetic Powder to treat convulsions or spasms of the bowel: 'Thanks be to God, I have found the following method to have served me well and often in many cases. First two or three doses of my Anti-Emetic powder every hour in a Tea of Alexander. This stopped the vomit.'[35]

The unevenness of attitudes toward common beliefs at the time also reflected inroads from eighteenth-century Enlightenment philosophy encouraging first-hand observation in the study of nature and, from that, a rational empiricism that fostered a questioning of traditional theories and practices and an exclusion of magical beliefs from conventional medical practice, as well as of God.[36] Less obvious, but significant in supporting this, was the likely growing use of conventional practices in the home aided by popular medical texts written by physicians – of which William Buchan's *Domestic Medicine* (1st edition 1769) stands out at least for literate people – and by commercial practices such as the sale of home medicine chests stocked with orthodox medicines.[37] Altogether, the century can be viewed as a significant step in the on-going secularization of medicine, already underway in the seventeenth century. As one historian has summarized:

> The world of learned medicine [in the eighteenth century] created a 'whole' [whole person] based on the 'animal economy' rather than the soul.[38]

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Differences between the Wagner and the de Benneville manuscripts hint that Wagner was in line with such trends, as well as limiting attention to the physical nature of disease and to natural explanations of symptoms. Nevertheless, I cannot say this accounted for rather unexpected omissions from Wagner's notes even though these are suggestive that he endeavoured to limit variables when evaluating treatments. Not only is there an absence of popular beliefs such as those noted by de Benneville, but Wagner also pays relatively little attention to diet, exercise, sleep or passions of the mind – long described in medical terms as the 'non-naturals' – even though for many physicians these were as critical in medical care (prevention and treatment) as were medicines. Wagner offers no specific information on preserving health as did de Benneville who stated: 'Fear God, follow a calm, moderate life, and with the blessing of providence and these means made use of, you will preserve your health.'[39] Having said that, Wagner was obviously not unmindful of these matters, for in a number of places he did spell out attention to diet and in his regimen for melancholy he wrote: 'physical motion, walking, riding or driving is beneficial.'[40] Nevertheless, all this was seemingly more in the way of adding to or complementing medical treatment.

Noticeable, too, is little reference to the role of emotions, passions or imagination, which might have been more readily construed as linked to a disordered soul. In two conditions, 'mania or madness' and 'melancholia,' where spiritual issues might have been considered especially relevant, Wagner only reports on the use of conventional medical treatment, although this can be interpreted as either a failure to accept a diagnosis of spiritual malaise, or the view that the soul could be reached by medicines acting on the body.[41] Also notable in Wagner (as in de Benneville) is the virtual absence of references to the intervention of God (or of Providence). Wagner mentions God only once in the already quoted use of anti-emetic powder in a tea of Alexander.[42]

Perhaps even more significant in terms of reductionist trends lies in Wagner's reports on therapies, some of which include judgments such as 'proven' (*probatum est*), 'helpful,' 'very beneficial,' or 'useful' in his treatment regimens. His obvious interest in simpler medicines – again contrasting with the de Benneville manuscript – and concerns about their quality and consistent formulation hint further at a mindset of trying to limit variables when evaluating the effectiveness of specific medications. Perhaps his classification of diseases (based mostly on anatomical parts of the body, but including fevers and women's and children's disease) – contrasting with de Benneville's largely alphabetical list of conditions in his lengthy Part 3 – facilitated thinking about concepts of disease in a comparative way, and hence about the relative effectiveness of a particular medicine for a particular condition. In turn, this was dependent on precision in diagnosis, clearly a concern for Wagner as reflected in various comments in the manuscript, including the already noted comments on constipation.

In summary, then, given the pattern of the Wagner manuscript, what is omitted, and the approach to therapy it is tempting to suggest that Wagner was in tune with eighteenth-century trends of paying attention to the disease as solely a dysfunction of specific parts of the body. On the other hand, his continued reference to polypharmaceutical remedies cannot be ignored, although an explanation can be readily suggested. If, in fact, he had any uncertainties about their value, at least as first line treatments, Wagner must have appreciated the confidence his Schwenkfelder mentors and others had in them. Moreover, consideration had always to be given to a patient's confidence in long-standing remedies, while there was no point in discarding the old unless newer remedies were, to his satisfaction, demonstrated as being superior either as first or second line treatment.

But what about approaching patients?

It must be asked: Do my comments so far add up to anything more than a compartmentalizing of knowledge rather than a 'philosophy,' a mindset, of reductionism? Perhaps Wagner considered that only his experience with medicines for particular conditions needed to be recorded. It has to be remembered that he had sympathy with Stahl's physiological views (underpinned by vitalist concepts), which he could find compatible with his Schwenkfelder faith whereby treating the body helped to sustain the soul and providing an 'environment' for spiritual rebirth or regeneration.[43] In fact, it is easy to see Wagner as melding into a longstanding religious tradition of the importance of maintaining a healthy body as part of one's religious faith.[44] This was indicated in Pietist thinking and Wagner's own version of his Schwenkfelder faith.

This returns me to my remark at the beginning of this article, that it is unclear that Wagner's manuscript reflects his actual everyday medical practice about which we currently have no other perspectives. Indeed, it may be a commonplace that medical texts are not always reflective of clinical medicine. Recently, it has been pointed out that William Cullen, the celebrated eighteenth-century physician and medical educator, advanced a systematic approach to medicine in his teaching underpinned by the complete nosology he developed, although in his private practice Cullen 'allowed a more empiric approach, tailoring treatment to the individual.' In fact, on this point one might suggest that a parallel – a very loose one – can be drawn between Wagner and Cullen; Wagner was systematic in his manuscript, but, in the light of his deep sense of spirituality, it is difficult to think that he did not cater to a patient's individual spiritual and emotive needs.[46]

Wagner: the thoughtful physician and 'messages' for today

If I am correct in saying that Wagner intended to pass on his medical experiences to his younger brother, or perhaps to other physicians, it is not altogether inappropriate to ask whether his practice of medicine has any 'messages' for today. Are there any features that prompt us to think more

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sharply about current medicine and about the medical mind? Looking back, despite the totally different theories, treatments, and health care environments across two centuries, one can ask whether the mindsets of physicians have changed as much as might be imagined. After all, a constant problem facing physicians is patients with worries, with difficult problems and with much individual variation in how they handle illness. Practitioners always face uncertainty and develop their own strategies to deal with it.

Medicine is not so monolithic as it is commonly portrayed. The differences between Wagner and de Benneville exemplify the well-known, wide spectrum of immigrant practitioners in colonial America – a 'western outport of European medicine' – where evaluating educational standards and practitioner skills were very much left to individual members of the public, rather than to relying on legislated standards, which, although increasingly present in the second half of the century, were difficult to enforce.[47] Today, with rigorous educational and licensing requirements, the quality of care offered by conventional medical practitioners is, to a large degree, left to others. Yet tremendous variations in practice (as reflected in de Benneville's manuscript) continue. Why is it that only some conventional practitioners support the use of complementary and alternative medicines that do not meet the standards of evidence used to license pharmaceuticals? And why is it that physicians often use conventional drugs in non-approved ways? Why is it that physicians can be slow in accepting new treatments even though they are approved for use? Why do some practitioners continue to over prescribe antibiotics? And so on.

What comes through in the Wagner manuscript (highlighted by the contrasting de Benneville) is a thoughtful physician grappling with uncertainties, with medical theories that do not always fit his clinical experiences or lead to successful treatments, and a wide range of old and new medications. Although Wagner was well read, he did not have today's stream of constantly revised practice guidelines, updated drug compendia, the results of extensive systematic research, continuing medical education, etc., to help with medical decision-making. Granted he had, so far as we can tell, a good medical library and I suggest that the array of authorities he used provided checks and balances with his own theoretical persuasion and clinical experiences in ways analogous to the use of clinical trial data today.

Wagner, too – as I have suggested – perhaps saw reductionsm, at least the concept not the term, as a strategy, as a tool, at least to identify the effects of medicaments on the physical aspects of disease. Although there is no evidence that he followed the development of new ways of evaluating the effectiveness of medicines that were developing in the eighteenth century, albeit accelerating after his death – namely animal experiments, comparative trials, observations on groups of patients – one senses he would be sympathetic with these as a *strategy*.

Today, many physicians recognize that the strategies of research, which provide invaluable guidelines for treating a 'population' of patients, cannot always be applied to the care of individual patients subject to far more variables than considered in clinical trials of drugs. Yet there are other physicians, maybe more often younger ones, who seemingly limit their practices to applying the results of reductionist research without, as is recommended, using it in the context of clinical experiences and the needs of an *individual* patient. What many people are asking for today is how to educate physicians such that the strategies of medical science are always applied in the context of the values and needs of a particular patient. I have a feeling Wagner was adept at this, all the more so because, as a liberal spirit within his Schwenkfelder faith, he was seemingly tolerant of the religious views of those of other persuasions.[48]

Author's address: jcrellin@mun.ca

Endnotes and References

1. Based on a lecture delivered to the Society of the Descendants of the Schwenkfelder Exiles, Pennsburg, Pennsylvania, October 2006.
2. Many historians have pointed to the 'paradoxes' of the century, see Porter R. Introduction in Porter R. (ed.) *Medicine in the Enlightenment.* Amsterdam: Rodopi, 1995: 1.
3. In some respects attitudes of physicians, especially to patients, can be interpreted from case histories. However, often this is confounded by the physician's translation of patients' narratives into medical theory, and hence into professional rather than lay language. For an illustration of this, Geyer-Kordesch J. Whose Enlightenment? Medicine Witchcraft, Melancholia and Pathology. In Porter. Note 2: 113-127. Of particular relevance to the present account is that Geyer-Kordesch considers the case histories of Frederick Hoffman (1660-1742) whose writings may well have been known to Abraham Wagner, the subject of this account.
4. A project led by Dr Renate Wilson, Johns Hopkins University. The manuscript under consideration, the Wagner manuscript, can be viewed in the original German/Latin with an English translation on the website of the College of Physicians of Philadelphia (http://contentdm.collphyphil.org/) accessed January 2007 under the heading 'Eighteenth-century Colonial Formularies.' The manuscript is owned by the Schwenkfelder Library and Heritage Center, Pennsylvania (see (http://www.schwenkfelder.com/) (accessed January 2007). All quotes in the following discussion paper are from the English translation with an occasional emendation. The capitalization of materia medica in the manuscript and the named preparations has been retained, as have folio numbers. A second (de Benneville) manuscript (considered below), in the possession of the College of Physicians of Philadelphia, is also available on the website with appropriate background information.
5. Crellin J.K. Theory and Clinical Experience in Eighteenth-Century Extemporaneous Prescriptions – a Reciprocal Relationship? *Pharm in Hist* 2006; 48: 3-13; and 'Mentors, Formulae and Continuity in Eighteenth-Century Therapeutics' in Helm J. & Wilson R. (eds) *Medical Theory and Therapeutic Practice in the Eighteenth Century. A Transatlantic Perspective*. Kornwestheim: Franz Steiner Verlag, *in press*. These articles, along with the website introductions to the manuscripts, provide documentation to the summary information on Wagner's life and spiritual convictions.
6. See Berky A.S. *Practitioner in Physick. A Biography of Abraham Wagner 1717 [sic] – 1763.* Pennsburg: The Schwenkfelder Library, 1954.

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7. Berky, ibid. p. 66 quoted a letter (unreferenced) from Wagner signed 'Abraham Wagner, Practitioner of Physic commonly call the Schwenkfelder Doctor.'

8. For an account of the medicines, Wilson R. *Pious Traders in Medicine. A German Pharmaceutical Network in Eighteenth-Century North America*. University Park: Pennsylvania State University Press, 2000.

9. For some comment on this, James R. *Pharmacopoeia Universalis: or a New Universal English Dispensatory*. London: Hodges, 1747: 721-723.

10. Wagner ms. f. 011v.

11. Allen Viehmeyer in a private communication indicated that this practitioner had to be de Benneville. See also Berky. Note 6: 69 and other pages for relationships with Wagner.

12. Wagner ms. f. 063r. Panchymagogum is the most common spelling though variants exist. Pharmaceutically it is of interest that the directions for preparing the medicine included a suggestion for making it more palatable: 'You may add 2 ounces of manna if you like.'

As with theriac, various panchymagogum formulae existed. Two others – one as an 'extract' – are mentioned in the Wagner manuscript, though not written in Wagner's hand. One of these, written out in full, was noted as 'in particular that of Halle:' (Wagner ms. 065r; the same formulae with various concentrations of ingredients also appears on f. 062v and f. 064v.) A reference to Crollius' Extract of Panchymogogum in 'Halle Pills against obstructions' appears on f. 053v.

13. The following notes on de Benneville are taken from the introduction on the manuscript website and from a paper by Allen Viehmeyer: Abraham Wagner and George de Benneville: Physicians of Body and Soul in Colonial Pennsylvania. Forthcoming in Helm and Wilson. Note 5. I am grateful to Dr Viehmeyer for an advanced copy.

14. The signature appears on f. 172 following the account on astralis diseases. For information on sources see Introduction to Web version. De Benneville's failure to acknowledge his source material is puzzling given the general importance contemporary physicians (including Wagner) attached to recognizing medical authorities of the past. One suggestion (see Website Introduction) is that omitting the names of heathen authorities was part of de Benneville's radical Christian sensitivities, but the unfinished state of the manuscript must also be a consideration.

15. The one formula specifically noted as de Benneville's is another polypharmaceutical, a Tincture of Balsam with fifteen ingredients (herbs, resins and balsams) 'digested' in spirit for eight days 'in a gentle warmth. (De Benneville ms. f. 124.) It was added that the dose of a teaspoonful in fennel seed tea was 'a fine medicine in colics, pain of the limbs, and sweetens the blood.'

Senega (or Seneca) snakeroot is mentioned four times in various regimens, namely for asthma as a result of various 'dropsies' ('breast,' 'belly,' and 'womb') and as part of the regimen for 'pain of the limbs or rheumatism.' (De Benneville ms. ff. 198, 200, 222 and 210 respectively.) Ginseng is also noted, probably American and hence another example of an indigenous plant, although one cannot discount the reference being to Chinese ginseng. References to other indigenous plants – sarsaparilla, sassafras, and Virginia snakeroot – exist, though these plants were already well known in Europe during the seventeenth century

16. Omitted from the Web version of the manuscript are 42 pages of therapeutic notes (often excerpts from publications) added after de Benneville's death. Many are initialed 'GdeB,' evidently his son.

17. The Paracelsian content in the de Benneville manuscript has been analyzed in forthcoming papers by Joel Shackleford. For convenience, we include here the definitions of the diseases according to de Benneville: 'Astralis or Astrabolismus Diseases as caused 'the striking or blasting of ignis [fire] and aer [air] uniting together, and by the influence of the planets casting forth venomous vapors which strike on the syderatus and corporatus parts of the body.' (He also gives a list of plants and the conditions they cause). And, for tartarous diseases: 'The Tartar is a coagulated substance which forms itself in all parts of the body, from the different sorts of nourishment, as it works into all vegetables by nature, out of the earth and water, and dissolves in the body. And if this corroding poison is not destroyed by digestion and carried off with the excrement by nature, it creates a corrosive substance in the blood and inward parts and is called Tartar, of which there are four sorts, as viscus, bolus, arena, and calculus. Out of these four coagulated substances derive all tartarous diseases in the body.'

18. For a covenant between God and the physician (analogous to providing the gift of healing), see Elmer P. Medicine, Religion and the Puritan Revolution. In French R. and Wear A. *The Medical Revolution of the Seventeenth Century*. Cambridge: Cambridge University Press, 1989: 10-45.

19. Ibid. for connection of Paracelsus and Protestants.

20. De Benneville ms. f. 190. Of interest is the view that three 'herbs are excellent in Tartarus diseases: Cichorium, Ononis, and Carduus Benedictus.' (Ibid.)

21. De Benneville, ms. f. 130. It is virtually the same as 'Balsamic Panchymagogum' that appears in de Benneville's account; differences include digesting in a larger quality of spirit and for eight days rather than six. Also a decoction of chervil is omitted in the de Benneville manuscript, which additionally directs taking the preparation in a flax seed tea. The possibility exists that the many references de Benneville makes to Panchymagogum are to the Balsamic formula, though he gives no indication.

22. De Benneville ms. f. 152. Since it is added in a different hand, initialed GdeB, it was perhaps written in by de Benneville's son. I include the directions for its preparation here as an illustration of the precision in formulae intended to ensure as much consistency from batch to batch as possible. 'Mix them well together in a mortar and then mix them into a mass with Tinctura Panchymagoga or Elixir Proprietatis or even with water, and then make of the mixture 60 pills. Four, five, to seven pills may be taken for a dose. They are excellent as a purgative to carry off bile from the stomach, as well as [a] powerful diuretic in dropsies. I have known them to have a happy effect in that disease as well as in liver affections, bilious complaints, &c.'

23. De Benneville ms. f. 256. An ointment was also to be applied externally.

24. The formula of the laxative is not given, but the following are listed as 'Purgers:' manna, Socotrine aloes, rhubarb, senna, scammony, jalap, jalap resin, black hellebore, calomel, colocynth. (De Benneville ms. f. 31.)

25. De Benneville ms. f. 86, and for formula.

26. Viehmeyer. Note 13.

27. 'Constipation . . . is due to different causes. This must above all be taken into account for a cure. If it stems from viscid phlegm in the intestines, you must first use Digestive Salts, and then laxatives so that the impurity which caused dryness and constipation can be evacuated. Here the laxative drinks are very useful which can sometimes be used several times successively in severe cases. And in addition, some other laxative or purge can be

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useful such as pills and powders. Also Elixir of Health. Much and sufficient light drink such as small beer, tea, coffee, common water. Also, much in the way of thin broth is necessary and serves to moisten the gut. In a light case of constipation, this may well serve to open the bowels. Restraint must be exercised in eating and the foods should be light. If however the constipation and blocking of the bowels is due to an excess of stagnant and ebullient blood, and this is accompanied by internal heat, with heaviness of the head, etc., a Tempering Powder is useful of Vitriolated Tartar or Double Arcanum, Cream of Tartar and Prepared Crab Eyes mixed with a little Saltpetre, all in equal amounts. Or Tempering Powder as noted above, and Jalap, each of sufficient quantity. Of which one scruple to one half drachm should be taken morning and evening.' (Wagner ms. 017r and v. The elixir of health has two formulae in the ms.)

28. For some comments on these, Crellin J. K. How Shall I take my Medicine? Dosages and Other Matters in Eighteenth-Century Medicine. *Caduceus* 1997; 13: 39-50.

29. For a general discussion on trends in writing prescriptions, Crellin J. K. and Scott J. R. Pharmaceutical History and its Sources in the Wellcome Collections. 3. Fluid Medicines, Prescriptions Reform, and Posology, 1700-1900. *Med Hist* 1970; 14: 132-153. Aside from the few references to tea, Wagner did refer to a julep as a vehicle. On one occasion, he noted giving a woman suffering from burning fever and trouble in the breast the'Halle Tempering Powder and Mineral Bezoar Powder in a cooling Julep.' (Wagner ms. f. 013r).

30. De Benneville ms. f. 290. The influences of fear in pregnancy are well known in folklore. References to it in Pennsylvania have added interest, cf. Brendle T.R. and Unger C.W. *Folk-Medicine of the Pennsylvania Germans. The Non-Occult Cures.* New York: Kelley, 1970: 218. A detailed comparison of the de Benneville ms with this book would be of interest.

31. De Benneville ms., f. 234. De Benneville also notes ways to diagnose pregnancy (twelve signs are listed) and expulsion of the afterbirth by getting a woman to blow into her hands,

32. For signs of pregnancy, de Benneville ms. f. 286. (Like many physicians, here he noted the'ignorance' of common people); for afterbirth f. 284; for snake bite f. 250; for paronychia f. 236 (easier options are given).

33. A sense of permeability may reflect a partial reversal of the general denigration of miracles that had emerged in the seventeenth century, as well as a pervasive acceptance of magical beliefs among both'elite' and ordinary people. For perspectives on miracles and persistence of beliefs: Butler J. The Spiritual Importance of the Eighteenth Century. In Lehmann H, Wellenreuther H and Wilson R (eds) In *Search of Peace and Prosperity. New German Settlements in Eighteenth-Century Europe and America.* University Park: Pennsylvania State University Press, 2000: 101-114, especially 105-106; and Roeber A. G. The Problem of the Eighteenth Century in Transatlantic Religious History. Ibid. 115-138, p. 122 for note on widespread existence of magical beliefs.

34. Wagner ms. f. 020v.

35. Wagner ms. f. 021r. Another reference to Alexander appears on f. 019r:'Mix a dose of one half scruple in warm broth or tea of Yarrow or Alexander, every 3 or 4 or even 5 hours.' For another instance of an appreciation of local treatment: for tenesmus, a tendency to want to pass faeces,'The common people drink tree oil and consider this good' (f. 019v); References also exist (as in de Benneville, note 15) to the use of Virginia snakeroot (once), sarsaparilla (once) and sassafras (twice), all indigenous plants, but already long known in Europe. (Wagner ms. ff. 077r, 035r, 035r, 036v.)

36. For reference to removal of God, or at least trends that left no place for God, see French R. Sickness and the soul: Stahl, Hoffman and Sauvages on Pathology. In Cunningham A and French R. (eds) *The Medical Enlightenment of the Eighteenth Century.* Cambridge: Cambridge University Press, 1990: 88-110.

37. That is not to say that the growing range of patent or proprietary preparations was not muddying the boundary between conventional and non-conventional practices.

38. For relevant consideration of the soul as a backcloth to possible influences on Wagner: Geyer-Kordesch J. (Note 3, quote: 125) and her earlier article, Passions and the Ghost in the Machine: or What not to ask about Science in Seventeenth- and Eighteenth-Century Germany. In French and Wear. Note 18: 145-163.

39. De Benneville ms. f. 224. To this he also added medicines to be taken in the Spring and Fall.

40. The examples of diet: in the case of 'dysentery' ('diet should usefully contain many warm drinks,' f. 020r);'retention and stoppage of the monthly period' ('proper diet,' f. 037r); 'so called adhesion in children' ('the mother should avoid a diet that promotes gas,' f. 045v);'when little children break out' ('good diet,' f. 048v); and for a'scirrhus' ('a good diet,' f. 060v). The reference to exercise: f. 003v.

41. In mania, while Wagner notes vigorous approaches, he also mentions a simpler remedy judged as 'proven' (f. 004r). This general point is made in the context of John Wesley's concern with distinguishing insanity as due to spiritual malaise or due to physical causes associated with corruptions in the body. See, Laffey P. John Wesley on Insanity. *Hist Psych* 2001; 12: 467-479. It should be noted that Wagner did not avoid a consideration of 'uncontrolled' affects of the emotions as in his consideration of Hypochondriasis, f. 027r

42. Wagner ms. f. 021r. For another example of an appreciation of local usage for tenesmus (a tendency to want to pass faeces): 'The common people drink tree oil and consider this good' (f. 019v). Also,'Mix a dose of one half scruple in warm broth or tea of Yarrow or Alexander, every 3 or 4 or even 5 hours' (f. 019r).

43. See relevant context in Roeber. Note 33: 127. He points out that Christian Friedrich Richter, a Pietist, explained that just how one should have direct access to the scriptures, so, too, in the medical realm one could learn to care directly and personally for the body.

44. This, too, is seemingly in line with, for example, an interpretation of John Wesley's widely distributed book *Primitive Physic* (1747 onwards) that it 'revitalized faith and "modern" medicine to work in a way appropriate to each other.' Cf., Butler. Note 33: 106, and Madden D. Contemporary Reactions to John Wesley's *Primitive Physic*. Or the Case of Dr. William Hawes Examined. *Soc Hist Med* 2004; 17: 365-378: 'Wesley's emphasis on individual empowerment mirrored a theological conviction that man could potentially work toward his own salvation.' (p. 378).

45. Wild W. *Medicine-by-Post. The Changing Voice of Illness in Eighteenth-Century British Consultation in Letters and Literature*. Amsterdam: Rodopi, 2006: 187.

46. Mentors, Formulae and Continuity in Eighteenth-Century Therapeutics. Reference 5.

47. Brock H. North America, a Western Outpost of European Medicine. In Cunningham and French. Note 36: 194-216. For spectrum of practitioners in colonial times, Bell W. J. A Portrait of the Colonial Physician. In his *The Colonial Physician and Other Essays*. New York: Science History Publications, 1975: 5-25.

48. For indications of liberal thinking, Berky. Note 6: various comments 36-76.

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Reminiscences from the 40th Anniversary Conference of the British Society for the History of Pharmacy

It is often said that everyone remembers where they were and what they were doing when President Kennedy was shot. Delegates at the 2007 Conference of the BSHP found that it is a different story when you try and remember what others were doing at an influential moment in your life. Over dinner we tried to remember 1967, our founding year. One member at least had a legitimate excuse in that she was not born when the BSHP was founded.

Of the national and international incidents recalled more were disasters like the Vietnam and Israeli six-days wars or the oil spillage caused when the Torrey Canyon ran aground in the Scilly Isles than pleasant memories.

Two positive initiatives are still prospering today: heart transplants, first successfully achieved by Christiaan Barnard in 1967, and the Roman Catholic Cathedral in Liverpool, dedicated that year. The QEII has not been so lucky, although cruising is increasing in popularity and the miniskirt is also experiencing a come-back.

Cultural events were not often recalled except for the popular music of the time. This concentration on home entertainment would have been boosted by the launch of Radios 1 to 4 that year. The three most frequently cited were *Sergeant Pepper* by the Beatles, *I'm a believer* by the Monkeys and the European Song Contest winner *Puppet on a String*.

The concentration on home entertainment may also have been the result of family commitments as many members reported the birth of children in 1967. Pharmacy hours were also long, to some extent antisocial, and not very well paid, making theatre and cinema visits difficult. Junior hospital staff were still waiting to break through the £1000 barrier. However it should be remembered that you could still buy a house in some areas for £2000 and petrol was 4s/- a gallon so things weren't too bad until Prime Minister Wilson devalued the pound.

In pharmacy practice we were still dispensing from Winchesters of common mixtures and some pharmacists were still having difficulty converting prescribers to the metric system.

Qualification became degree only and Bradford College of Advanced Technology acquired University status. Students from that year were also the last to enjoy interesting visits to pharmaceutical manufacturers before the Medicines Act required closed processes.

Many things have changed over the last 40 years, including the addition of many developments to the history of pharmacy, and the BSHP members intend to go on promoting its study.

Shirley Ellis

President Dr Shirley Ellis with 40th Anniversary cake

What was happening forty years ago?

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Fortieth Anniversary Conference of the British Society for the History of Pharmacy, Wakefield 30 March–1 April 2007

The Society celebrated its 40th anniversary at its annual conference, held this year at the Waterton Park Hotel, Walton, near Wakefield. Miss Ann Hutton and Mr Ainley Wade outlined the origins of the Society which had developed from the History of Pharmacy Committee set up by the Pharmaceutical Society in 1952.

Leslie Matthews and others had tried to develop the interest of the Pharmaceutical Society in pharmacy history earlier, but this had not been acted on. When JC Bloomfield was President of the Pharmaceutical Society in 1965-7 and also Chairman of the History of Pharmacy Committee he re-ignited the enthusiasm of members and further progress was made towards developing a separate body to be responsible for developing an interest in pharmacy history, research and the recording of the past.

In 1966 Ainley Wade was appointed secretary to the committee who had the task of considering various options for the future. Originally a draft constitution was prepared by the Pharmaceutical Society for a new Membership Group rather than a separate Society. After detailed consideration and amendment by the Council the BSHP was formed under the aegis of the Pharmaceutical Society on the 14 June 1967 with JC Bloomfield as the first president. Those serving on the inaugural committee included Prof. George ETrease (Vice-president), Dr John Crellin (Hon. Secretary), Mr Leslie Matthews (Treasurer), together with Dr Melvin Earles, Mr Charles Drummond, Mr Nicholas Herdman, Mrs Agnes Lothian Short and Dr T Douglas Whittet.

In 1976 the offices and administration of the BSHP were transferred to the Pharmaceutical Society's Scottish department in Edinburgh; Dr Lindsay Howden took over the role of secretary in 1984. Finally in 1998 BSHP was split off as a free-standing Society and took over its own administration. Throughout its 40 years the Society has always enjoyed a close working relationship and support from the Royal Pharmaceutical Society. Joint meetings of BSHP and the Pharmaceutical Society are held regularly during the winter months at Lambeth. One of the strengths of BSHP is that membership is open to historians with an interest in pharmacy and medicine who are not members of the Royal Pharmaceutical Society. This allows those with an interest in pharmacy to contribute to the ongoing research and work of the Society.

During the conference a number of other papers were presented by members and visitors. The conference hotel was the previous home of Charles Waterton, a 19th century naturalist. Mr John Whitaker of the Wakefield Museum spoke on Waterton's life and work. He described Waterton was one of the first 'eco-warriors'; he had travelled extensively in South America collecting plants and animals and studying the wildlife. On his return he created a wonderful nature reserve around his house. Much of his work can still be seen and the area is particularly attractive to many species of wildfowl. Dr Stuart Menzies in his talk on 'Pharmacy and Philately' showed an extensive series of illustrations of stamps with a medical or pharmaceutical theme. He emphasised just how frequently stamps have been used to commemorate medical and historical milestones in every part of the world. Ms Briony Hudson, Keeper of the Pharmaceutical Society's Collection described the history of the discovery and manufacture of Liquorice. It was known in this country from Roman times and had a long history of medical use. The nearby town of Pontefract was famous for liquorice and the home of 'Pontefract Cakes', samples of which were available to try.

Dr Peter Worling presented a paper entitled 'Elsie Maude Inglis' which dealt with her life in Edinburgh and the formation of the Scottish Women's Hospital units during the First World War. She served in Serbia and the Russian front. While she is well known in Edinburgh, her work for the improvement of the medical treatment of women and her outstanding contribution to the medical services during the war were not well known elsewhere. He hoped that his outline of her life would bring the details of her work to a wider audience. Mr Christopher Wragg gave some 'Historical Notes on Old Sheffield Druggists', while Mr Bill Jackson gave many interesting details from 'Mr Wheeldon's Toilet Almanac of 1879'.

Mr Roger Mills, the Society's honorary treasurer, outlined the long record of his family's association with pharmacy. In his paper entitled '1887–2007: A Pharmacy Record' he recorded 388 years of pharmacy registration within his family.

Layinka Swinburne had carried out extensive research in the North of England into the contents of the receipt books and common-place books which were kept in the larger houses and estates. A very large number of these books are still in existence, some held at the original houses and others preserved by local archivists. While these were generally filled with domestic recipes, many also had recipes and prescriptions for the treatment of common ailments. She was able to give many examples of the use of herbal, chemical, animal and mineral ingredients used in compounding these remedies. A recipe for nose bleeds was to take a toad in the month of March, dry it, place it in a silk bag and hang it around the neck. This would stop the nose bleed. While many formula could not have had a beneficial or indeed any effect, there were examples of traditional remedies which would have helped the patient on the road to recovery.

Peter M. Worling

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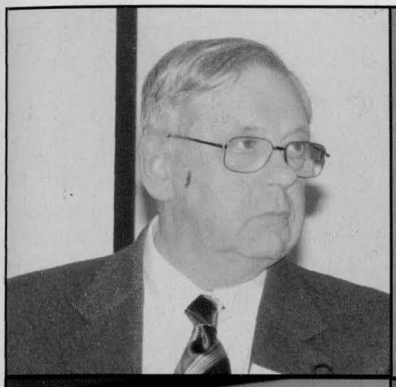
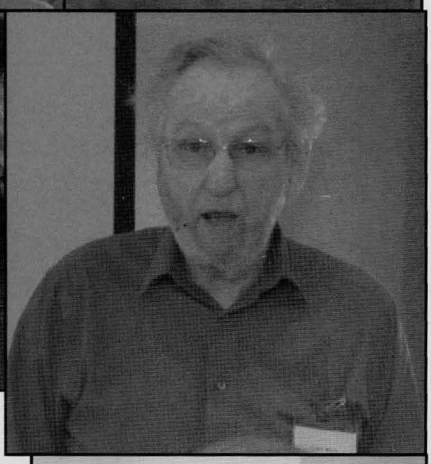
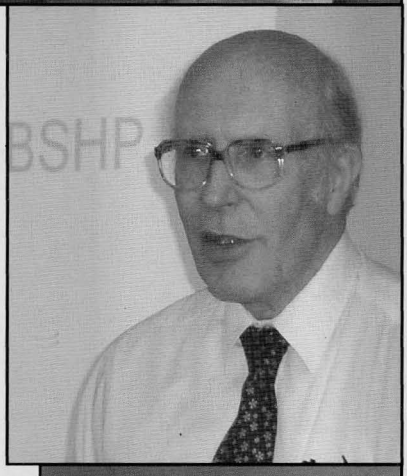




Speakers at the Wakefield Spring Conference
30 March-1 April 2007

Top row: Dr Stuart Menzies, Briony Hudson, Dr Layinka Swinburne; *row above:* Dr Peter Worling, John Whitaker, Roger Mills; *centre:* Drug jars from the JF Wilkinson collection at the Thackray Museum, Leeds; Ainley Wade; *bottom row:* Christopher Wragg, Ann Hutton, Bill Jackson.



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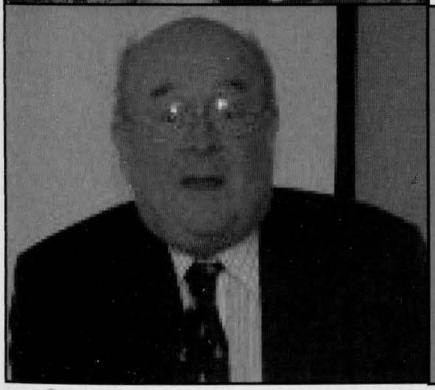

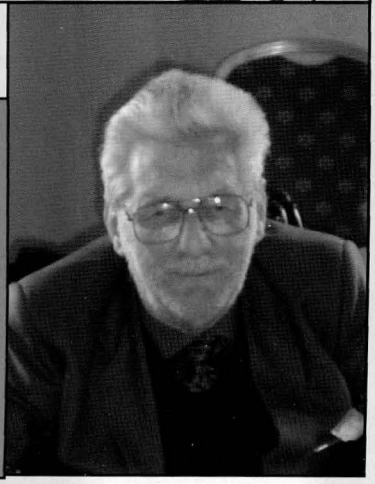

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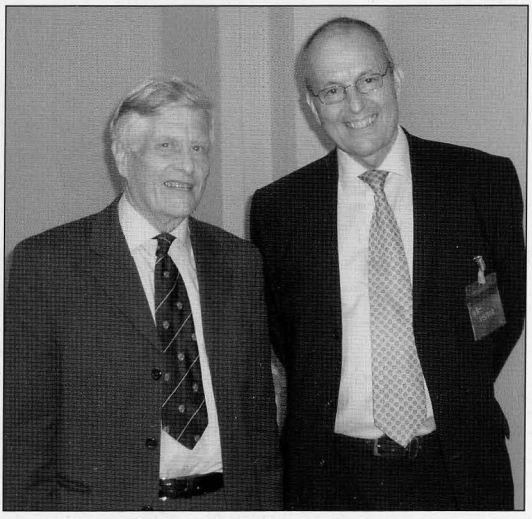
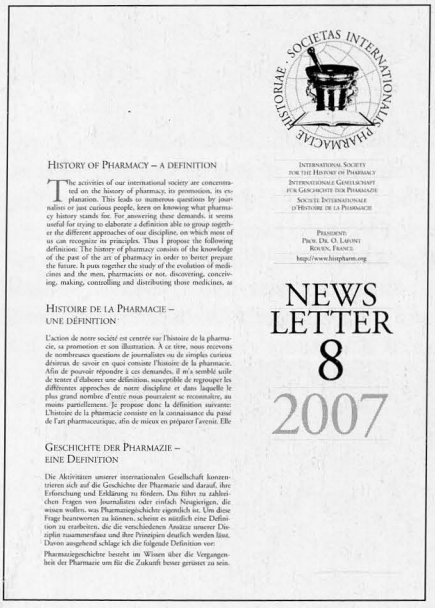
Waterton Park Hotel and Walton Hall near Wakefield, Yorkshire were the venue for the 40th Annual Spring Conference. Charles Waterton was a 19th-century traveller and naturalist who transformed the lake and surrounding parkland into the world's first nature reserve.



New President Dr Michael Jepson with Dr Nicholas Cambridge, speaker on 'Electricity and the Enlightenment' on 9 May 2007



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British Society for the History of Pharmacy

840 Melton Road, Thurmaston, Leicester, LE4 8BN
Tel: 0116 264 0083, Fax: 0116 264 0141, Email: bshp@associactionenterprises.com

The British Society for the History of Pharmacy was formed in 1967 under the aegis of the Pharmaceutical Society of Great Britain, having originated from its History of Pharmacy Committee.
BSHP seeks to act as a focus for the development of all areas of the history of Pharmacy, from the works of the ancient apothecary to today's ever changing role of the community, hospital, wholesale or industrial pharmacist.

Aims

Promotion of historical studies related to pharmacy.
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Publication of the research work of pharmaceutical historians.
Preservation of pharmaceutical artefacts and historic pharmacies.
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Co-operation with related professions and local historians on medico-pharmaceutical topics of mutual interest.

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Editor: Ainley Wade, BPharm, MPhil, FRPharmS, FSP
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Diary

Wednesday 10 October 2007

'The History of Pharmacy Education' by Michael Jepson. Lambeth

Wednesday 14 November 2007

'Pharmacy, Quackery and the Growth of Medicine in early modern England' by Patrick Wallis. Lambeth 6.30 p.m.

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I have also been offered a paper on "The potato and pharmacy". Would anyone like to provide a paper on another vegetable and pharmacy? We could make this a supplementary theme.

If you would like to contribute a paper at the conference please contact Shirley Ellis at 1 Willow Way, Bottisham, Cambridge CB25 9BS or by e-mail to ellisbottisham@compuservr.com giving your details and a title for your contribution. Closing date 30 November 2007

S. 33-36 doppelt vergeben

Oleum Catellorum

W A Jackson

Oleum Catellorum, Oil of Whelps or Oil of Puppy dogs, as the name implies, had as its main ingredient young puppy dogs. (Latin Catellus – young dog, whelp or puppy). For many years it was valued for its emollient, anodyne and strengthening properties.

It was probably the successor to the 'Oil of Red Dog', directions for preparing which were given in a *Receipt Book of Secrets,* published in 1562. It was said to have been used to heal a friar of St Onostres who for twelve years had a lame arm that was dry and withered like a stick.[1]

In the 16th Century Ambrose Paré was said to use the following formula for Ol. Catellorum:

> 2 new-born puppies, 1 lb earthworms, 2lbs Oil of Lilies, 16oz Venice Turpentine, and 1 oz Aqua Vitae.
>
> Boil the puppies (alive) in the oil. Add the worms, which have been drowned in white wine. Boil and strain. Add the other ingredients.[2]

In 1571 the Archbishop of Armagh suggested the following cure for the gout to Lord Burghley.

> Take two Spaniel whelps, of two days old, scald them, and cause the entrells to be taken out but wash them not.
>
> Take four ounces brimstone, four ounces torpentyn, one ounce parmacete,[3] a handful of nettles, and a quantyte oyle of balm, and putt all the aforesaid in them stamped, and sowe them up, and rost them, and take the dropes and anoynt you where your grefe is; and by God's grace your honour shall find helpe.[4]

In an early self-help book *The Skilful Physician* published in 1656 we find:

> A precious Remedy for any extreme Aches.
>
> Take a whelp that is still sucking (the fatter the better), drown him, remove his gut and fill his belly with black soap. Roast him on a spit, collecting the droppings and place these in a vessel. Make the patient sweat and anoint him with the oil, afterwards covering him with clothes to make him sweat. Make a charcoal fire in a pan, and place on this a good handful of sage letting him breathe in the fumes in a closed room. Do this five times.[5]

In another self-help book *The Poor-Mans Physician and Chyrurgion Inlarged* by Lancelot Coelson, printed in 1663, he gave the following instructions:

Continued on p. 40

https://doi.org/10.2355/pharmhist.v33i1.20803071403

A Night with Venus, A Lifetime with Mercury: The Treatment of Syphilis

Kevin Brown

Trust Archivist & Alexander Fleming Laboratory Museum Curator, St Mary's Hospital, London

Somehow sin and syphilis always seem to go together. Nowhere is this more apparent than in art. In his 1545 *Allegory of Venus, Cupid and Time,* a gift from Cosimo de Medici to François I of France, the artist Angelo Bronzino presents us with an admonition against lust in his depiction of Venus fondling an adolescent Cupid. In the background of the painting is a figure traditionally identified as Jealousy which bears all the signs of syphilis: the patchy hair loss, reddened eyes, missing teeth and bumps of the sufferer from the disease of love.[1]

The pox, as syphilis was originally known, had first come to notice as something new in Western Europe in the wake of the invasion of Italy by an earlier King of France Charles VIII in 1494. During the siege of Naples, French troops slept with camp followers who had earlier consorted with Spanish mercenaries who had served with Christopher Columbus during his voyages of discovery to the New World. Although there is much debate as to whether syphilis was already prevalent in Europe before the late fifteenth-century and only now reached a greater virulence, it is more than likely that it was brought from the Americas by Columbus and his sailors as an unequal trade for the Western diseases taken to the Americas which decimated the indigenous populations in the so-called 'Columban Exchange'. The evidence of palaeopathology is not conclusive but suggests an American origin, and the virulence of the disease in the late fifteenth- and early sixteenth-centuries supports the hypothesis that it was attacking a virgin population among Europeans.[2]

The earliest written account we have of the new disease appeared after the battle of Fornovo in July 1495 when the Venetian surgeon Marcello Cumano wrote that

> the sufferers were driven to distraction by the pains they experienced in their arms, legs and feet, and by an eruption of enormous pustules which lasted … for a year and more if left untreated'.[3]

What is particularly interesting is that the sexual nature of the disease was apparent from its very first appearance. The Paduan surgeon Alessandro Benedetti, for whom natural observation was the basis of medical progress, was also present at the battle of Fornovo and recorded in 1496 that 'through sexual contact, an ailment which is new, or at least unknown to previous doctors, the French sickness, has worked its way in ... The entire body is so repulsive to look at and the suffering so great, especially at night'.[4] Women, especially prostitutes, were vilified as carriers of the disease and blamed for its progress, though it was not something which could be spread by only one sex.

New though the disease may have been, doctors trained in the university schools of medicine attempted to fit it into existing ideas. It was linked in with classical Galenic ideas of disease as result of imbalance of the four humours – it was believed to have been caused by excessive heating by Mars and putrefaction of the cold dry black bile associated with Saturn. It was thought that it could be cured by bland foods and abstention from sex. Joseph Grünpeck ascribed it to the astrological conjunction of Saturn and Jupiter on 25 November 1484 which had initiated a chain of natural and political disasters culminating in the appearance of the pox, a belief referred to by Albrecht Durer in his etching of an aristocratic syphilitic from 1495.[5]

The modern name for the disease, syphilis, comes from the physician and poet Girolamo Fracastoro, who put the understanding of contagious disease on a more modern basis through his ideas that disease spread by seeds, though it is not quite the forerunner of modern bacteriology and the germ theory it is often thought to be. In the stately Vergilian hexameters of his poem *Syphilis sive Morbus Gallicus,* Fracastoro tells the story of Syphilis the shepherd who is punished by the god Apollo for blasphemy by being struck down with the disease. Apollo also provides a remedy for it in the form of guaiacum. The poem was written in 1511 also gives a diagnostic account of the infection and of the various remedies for it. In it he gives a vivid picture of the death of a noble youth, probably the poet Giovanni Cotta:

> Gradually that glistening springtime, that flower of his youth perished utterly, that vigour of mind; then the wasting sickness with its filthy scabs covered his sorry limbs and, deep within, his bones began to swell with hideous abscesses. Ugly sores began to devour his lovely eyes and his love of the holy light and to devour his nose, which was gnawed away, leaving a piercing wound.[6]

The legend of Syphilis the shepherd, though, was to persist and in 1664 Luca Giordano in his *Allegory of the Struggle of Vice and Virtue* depicts the sinister figure of a shepherd with the tell-tale signs of a flattened nose with a dip in it, scabs, bumps, alopecia and a gnawed away bone in his mouth giving a vivid warning of the price of sexual licence to an attractive blond youth assailed by temptation.[7] Similar warnings of the effects of syphilis were given in a seventeenth-century wax tableau, 'Morbus Gallicus', by Gaetano Zumbo.[8]

In its early days syphilis was remarkable for the virulence of the disease. According to Sigismondo dei Conti da Foligno, secretary to Pope Julius II, the pustules and ulcers gnawed away as far as the marrow and sufferers 'screamed day and night without respite, envying the very dead'.[9] A merchant of Perugia was so consumed between thigh and torso that it was possible to see inside his body.[10] At Bologna the pox ate away the nose and half the face

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Figure 1. Youth with syphilis by Hans Holbein, 1523
(United States National Library of Medicine)

of one unfortunate sufferer.[11] However, very quickly the disease became less virulent in its effects as the population became more inured to it.

Most early treatments involved the use of herbs. Tommasso de Silvestro, a canon of Orvieto, was afflicted with the pox from Christmas 1494. By 1498 his scabs were so painful that he was unable to rest. He was then confined to bed for six days and then bathed in wine and such herbs as rue, mint, rosemary, mulberry and sage.[12] The hot herbal bath was intended to draw out the poisons ofcorrupted humours. Sometimes olive oil was used as an alternative but was not always virgin. In 1498 the Venice Health Board forbade the resale of

> wretched oils … of a very bad quality in which people who have or have had the *Mal Francese* have been immersed, for as a result of these bodies being in these oils there has been a great deal of filth, scabs and dirt.[13]

Heat was also used to drive out the corruption from the body. Sores would be cauterised and the sufferer then put into a dry stove such as Cornelius' Tub, a wine barrel heated with hot stones placed on a bed of sand. The patient would be seated on a large perforated bench in the tub and then the whole thing would be covered with a cloth to retain the heat. He or she was allowed nothing to eat whilst undergoing this treatment twice a day for three weeks. The patient would be sweated until he could stand it no more.[14]

Treatments

Guaiacum, also known as 'lignum sanctum' or 'holy wood', was the wonder cure of the early sixteenth-century. It was believed to be the tree from which the cross on which Jesus was crucified was made. The wood was originally brought to Europe from Isola Beata off the coast of Hispaniola (Haiti) and was felt to be an appropriate treatment for syphilis on the grounds that if the disease had come from the New World, God would have provided the cure for it locally. Ulrich von Hutten, a sufferer from syphilis, believed that as in the case of the Saxon peasant who cured all his ills by drinking hot buttered beer, the simplest remedies and those provided by God were the best. The wood was ground to very fine sawdust, soaked in eight times its weight in water, boiled and reduced to half its volume. The scum was then dried to provide a powder to be used on the sores. The remaining liquid was reboiled and drunk by the patient to promote salivation and sweating to drive out the infection. The patient was then sweated in a heated room and swathed in blankets. He then faced a lifetime of chastity and abstinence thereafter.[15]

Figure 2. Preparation and administration of guiacum in the sixteenth-century, engraving by Philippe Galle after J. Stradanus
(United States National Library of Medicine)

The Fugger family of Augsburg had a monopoly on the import of guaiacum into Europe. As they had underwritten the indulgence of Cardinal Albrecht of Brandenburg that had triggered the German Reformation and had financed the successful bid of Charles V for the Crown of the Holy Roman Empire, this dynasty of merchants and their cure were regarded with suspicion by Protestants, though guaiacum remained popular in Roman Catholic countries.[16]

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The treatment for syphilis favoured by Protestant Europe was mercury. This in the form of 'unguentum Saracenicum' had been a staple of Arab medicine for the treatment of scabs, psoriasis, leprosy and other skin diseases. Alchemists in Western Europe also used it as a remedy for skin diseases. Paracelsus, dubbed the 'Martin Luther of Medicine' for his attacks on orthodox thought, advocated its use because of his belief that the best remedies were local ones and as mercury was found all over the world it was preferable to guaiacum which came from the Indies now that syphilis was a world-wide disease.[17] It remained the most effective cure until the twentieth century. It became a truism that a night with Venus would be followed by a lifetime of Mercury. It was first administered as an ointment and later as pills, liquors or as fumigation. The drawbacks of mercury were such unpleasant side-effects as profuse sweating, corrosion of the membranes of the mouth, gum ulcerations, loosening of the teeth and erosion of the bones. It was aided by hot baths, sweating and salivation to draw out the poison of the disease. It may have been more painful a remedy than guaiacum but it did not demand so severe a health regime.[18]

However, its effects could be horrific. Mercury was used to treat Cardinal Bartolomeu of Segorbe, a friend of the Borgia pope Alexander VI. He was given an ointment comprising litharge, ceruse, incense, mastic, pine resin, pork fat, roseate oils and quicksilver. He used it to excess to deaden the pain at the cost of increased anxiety and sleeplessness, eventually killing himself with a stronger ointment rubbed into his groin and arm-pits.[19] Rabelais lamented the pain of victims of the use of mercury whose teeth rattled like the keys on an organ or spinet and who were reduced to 'foaming like a wild boar which the hounds have driven into the toils'.[20] Yet it remained the most effective treatment into early 20th century and was even used at one time for a dose of the clap by John Keats, supposedly the most chaste of Romantic poets.[21]

There were less painful alternatives. Perhaps the best protection was actually to use a preventative. Gabriele Fallopio has been credited with the invention of the condom though his precaution against catching syphilis or gonorrhoea was to be used immediately after, rather than during, intercourse. He recommended that the man should cover his penis after intercourse with a cloth soaked in a concoction of wine, guaiacum shavings, copper flakes, precipitated mercury, gentian root, red coral, burnt ivory and powdered deer-horn.[22] In the seventeenth-century there was even a short-lived fashion for anti-venereal underpants. In the 1760s, James Boswell disliked the use of a condom made from an animal bladder during intercourse and complained that he had been careful 'to engage in armour, which I found but a dull satisfaction'.[23] Later, washable vulcanised rubber sheaths appeared in the nineteenth-century. The first latex condoms went on sale under the name of 'Dreadnoughts' in the early 1920s and were marketed as 'the strongest, thinnest and silkiest protectives in the world'.[24]

Various New World weeds, roots and woods were also used to promote sweating and salivation, including China smilax (Root of Chinas), sarsaparilla, bryony root, sassafras wood and cinchona bark. Tobacco was also touted as an antidote although James I was not so sure about that and fulminated against 'a stinking and unsavoury antidote for so corrupted and execrable a malady, the stinking suffumigation whereof they yet use against that disease, making so one canker or vermin to eat out another'.[25] Even less savoury was the persistence into the nineteenth-century of the idea of using a virgin as a scapegoat to which the disease could be passed by the act of rape.[26]

One of the effects of mercury treatment was that the nose was often eaten away. Indeed in eighteenth-century London the No-Nos'd Club was founded for those who had 'sacrific'd their noses to the god of Priapus, and had unluckily fallen into the Aethiopian fashion of flat faces'.[27] Gaspare Taliagcozzi in 1597 developed a technique of skin grafts for fashioning new nose from a flap of skin of the upper arm. The results were crude and Ambroise Paré instead recommended the use of an artificial nose held in place by a clasp or pair of spectacles.[28]

It was not only qualified physicians, surgeons and apothecaries who offered treatment for venereal disease. Mountebanks and charlatans preyed on the fears and hopes of 'those children of Venus … anchored in a strange harbour' and offered painless alternatives to mercury. In doing so they resorted to the old staples of guaiacum, sassafras and sarsaparilla, though they kept the ingredients of their cures secret, offering merely 'a Herculanean antidote against the pox' and remedies 'so private that the wife shall not know whether her husband be cured of that distemper, nor the man of his own wife, nor none of their relations shall take any notice of their cure'.[29] Booksellers and bakers sold such concoctions as Isaac Swainson's Velno's vegetable syrup, Keyser's pills and Kennedy's Lisbon diet drink. Some cures were slipped by errant husbands into their spouses' cocoa. When this happened to the actress Sarah Siddons, she was 'a ball of resentment'.[30]

Advertisements, offering quick, painless and secret hopes of recovery with no side-effects, led to greater fear of the disease among laymen rather as the reading of medical dictionaries by the uniformed can induce hypochondria. In his *Marriage à-la-Mode,* William Hogarth depicted a visit from Viscount Squanderfield with his mistress to Monsieur Pillule to seek a cure for syphilis. Pillule was actually based on Jean Misaubin, in reality a regular physician but one whom Hogarth equated with the quack to deflate the pretensions of the medical profession.[31] In fact the claims of the quacks were opposed by conventional doctors in a battle that went on until the 1917 Public Health (Venereal Diseases) Act forbade

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advertisements and treatment by unqualified practitioner, but not before damage had been done and many 'a promising young man was absolutely driven to suicide by the blackmailing of a quack'.[32]

Arsenicals

Salvarsan or Compound 606 (arsphenamine) was the first modern effective alternative to mercury. This arsenical compound was discovered by the German chemist Paul Ehrlich, a virtuoso of the art of the test tube and of the cluttered laboratory, and his research assistant Sahachiro Hata in 1909.

Figure 3. Paul Ehrlich, discover of Salvarsan, in his office, c. 1909 (Paul Ehrlich Institut, Frankfurt)

Ehrlich was searching for a 'magic bullet' against the spirochaete and found it after performing a series of experiments with 606 different synthetic compounds.[33] Salvarsan was administered by intramuscular and intravenous injections. Ehrlich took a personal interest in the precise administration of Salvarsan and warned against the risks of fever if the needle was not absolutely sterile; he recommended painting the patient's skin with iodine before injecting Salvarsan.[34] However, it was toxic and could cause abdominal pains, vomiting, convulsions, jaundice and skin complaints.

In 1914 Ehrlich developed Neosalvarsan (neoarsphenamine) from compound 914 as a milder, soluble form of Salvarsan, though he himself believed compound 606 to be superior.[35]

Paul Ehrlich sent one of the earliest samples of Salvarsan to reach Britain to his friend Almroth Wright, who as an immunologist had no time for any form of chemotherapy. Wright passed it on to his younger colleague Alexander Fleming who was skilled at the new technique of intravenous injection. Fleming was a territorial soldier in the London Scottish Regiment and was depicted by the artist Ronald Gray as 'private 606' in recognition of his growing reputation as a pox doctor.[36] Later, the treatment of syphilis was to be revolutionised during the Second World War by the use of penicillin, discovered by Alexander Fleming at St Mary's Hospital, Paddington in 1928 and developed by a team of researchers led by Howard Florey at the Sir William Dunn School of Pathology, Oxford, in the 1940s.[37] Its importance for the treatment of syphilis was first demonstrated by John Mahoney at the United States Marine Hospital and Venereal Disease laboratory at Staten Island, New York, when he treated a young sailor with penicillin only to find little trace of the spirochaetes in the patient's blood after only four hours and could declare him free of disease after 15 days.[38]

During the North African campaigns of 1943 more men were out of action from venereal disease than from wounds.[39] Penicillin seemed to offer the answer to the manpower problem, but the War Office was nervous of the likely protests if the public found out that penicillin which was in short supply was being used on men with VD rather than on wounded war heroes. The matter was referred to Winston Churchill who decreed that

> this valuable drug must on no account be wasted. It must be used to the best military advantage.[40]

This was interpreted as sanction for the use of the drug on VD cases. Penicillin still remains the drug of choice for syphilis, although other antibiotics are now also in use. It really came into its own following the landings in Sicily and the campaigning near Naples when, appropriately, it checked a scourge which had first begun in that very place some 450 years earlier, though not for long. Yet, moral considerations remained to the fore. Posters warned men that 'she may look clean but pick ups, good time girls and prostitutes spread syphilis and gonorrhoea' and that 'you can't beat the Axis if you get VD'.[41] Avoidance is still the best treatment of all.

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Author's address: Kevin.Brown@st-marys.nhs.uk
www.st-marys.nhs.uk/fleming_museum.html

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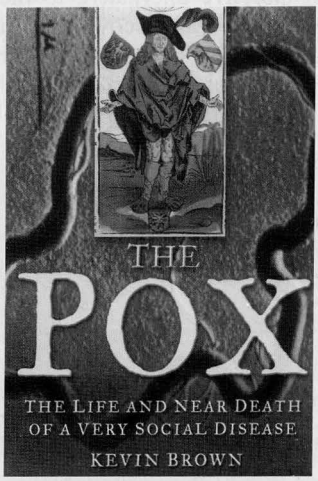
Kevin Brown is the author of *The Pox: The Life and Near Death of a Very Social Disease,* Sutton Publishing, 2006, ISBN 0-7509-4041-7 He is currently working on *Fighting Fit: Health, Medicine and War in the Twentieth Century* to be published in 2008.



Mardles

John Newstead
Norwich

During the 2004 BSHP Conference in Cambridge, I wandered into the town to look for the pharmacy that I worked in from 1956 to 1960. I found the shopfront looking exactly as I remembered and with my heart beating faster I approached the door but it was locked. Now part of a national chain, the shop closes on Saturday afternoons! Through the glass of the door I could see the shop layout had changed very little but I really would have liked to see the dispensary and warehouse. All the way back to the Conference hotel I had vivid flashes of what it was all like during my time there and gradually things came together so I thought I would record it.

I joined a well known, in fact probably the best known, firm in the main street of Cambridge, opposite the Fitzwilliam Museum, and lived in a company house in Trumpington, a mere three-mile cycle ride from the pharmacy. My boss, one of three directors of the firm, was a workaholic, everything having to be done in double-quick time. He impressed on me that my function was to support him in the dispensary and be there when he had to go to Rotary lunches and other meetings during the week.

The first day initiation was eventful to say the least. During a lull in dispensing prescriptions I was shown the storeroom and the Aseptic Laboratory, which was a glorified cupboard with fluorescent lighting, a bench on which stood a small glass screen, a Bunsen burner, and a wooden stool. Outside the 'Lab' door

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was an autoclave and sink with germicidal soap. Only a cursory glance was allowed: I was told that I would soon find out what it was used for.

During another quiet period I was taken down to the cellar by the unqualified dispensing assistant. Immediately noticeable was the very damp atmosphere and I was surprised that there appeared to be very little in there; apart from a large number of brown Winchester bottles of Xylene and 1-lb jars of Wool Fat, everything was on shelves at chest level, nothing on the floor. Again I was told not to worry as I would find out what they were for in due course. I remember wondering what the two pairs of wellington boots sitting on the top cellar steps were used for.

It was not long before I discovered the secret of the cellar. Two college porters in their traditional brown coats appeared carrying large wicker baskets. These contained several large brown wide-necked bottles, which were unceremoniously dumped on the dispensary floor. "We'll pick 'em up next week mate, OK?" was all that was said. The two men, one wearing the usual soft brown cap and the other almost completely bald, shuffled out of the shop, stopped to light their cigarettes, and disappeared round the corner.

While removing the sticky bottles from the dispensary and putting them on a bench in the outside warehouse, I noticed a very greasy label which stated 'Library Solution Very Inflammable'. After scrubbing my hands, I was presented with a Formulary book open at the page 'Library Solution' and was told to get on with it.

The formula belonged to one of the colleges and from the handwriting in the book, it appeared very old. The preparation was stated to be 'For preserving the leather bindings of all reference books of note'.

Before starting to prepare this 'Special' I was advised to wear an off-white, actually more greasy and dirty, coat that was hanging by the bench in the warehouse; I soon found out why. The returned bottles had to be cleaned thoroughly with hot soapy water. Large amounts of Wool Fat had to be weighed and transferred to the now clean brown bottles that had been returned, and due to the nature of the Wool Fat – a cross between axle grease and sticky toffee, some inevitably became attached to places other than inside the mouth of the bottle. The next stage was equally as tricky. Xylene, very volatile and flammable, had to be poured into the bottles half full of the brown sticky mess using a glass funnel. Invariably some of the Xylene bubbled over on to the bench, my hands, and the coat until the bottles were full and the black Bakelite caps could be screwed on tightly.

After cleaning the outside of the bottles they were given a vigorous shaking and left to stand on the bench in the warehouse. A notice was then pinned up in the dispensary stating 'Library Solution - Shake often'. Every time anyone went into the warehouse, each bottle had to be given a vigorous shake, this going on until there were no lumps left. The finished product, looking like a brown soup and smelling like aviation fuel, took up to five days to complete. My one consolation was that it was not me that had to apply this preparation to the books .

As winter came and I needed to descend into the murky depths of the cellar once more, I found out why the wellington boots were there. Along the main street outside the shop a constantly running stream was channelled between the pavement and the road. With excess rainfall, water used to find its way into the cellar, often almost up to the top of the wellington boots. Although there was a chalk mark on the wall indicating 'Above welly line' I was never certain whether or not it was accurate and always proceeded with caution.

There was a college next door to the pharmacy and a museum opposite and although there was a lot of activity outside the shop with bicycles often blocking the doorway` much to the annoyance of the 'boss' as the students were only a minority of the customers. Most of the people coming into the shop were Lecturers, Professors, Heads of Departments, Doctors and hospital staff many of whom had accounts with the firm, and while they were all very polite and easy to deal with, several of their wives would come into the shop, wander round, pick up several items,wave them at one of the girls behind the counter and disappear out of the shop door, leaving the counter staff to try and work out exactly what had been taken. My arrival helped the situation as I had no idea who anybody was and the girls gave me the difficult ones whose names I would have to ask, at the same time offering to put the items in a bag. That way I knew who and what to charge.

At the end of each day between 6 and 7 pm, and in between dispensing prescriptions I had to help price up all the items recorded in the Day Book ready for the office staff to transfer to the relative accounts the next morning. In the winter months a high volume of dispensing in that last hour often meant the Day Book was not priced up till after the shop had closed. I was not too happy about that as it meant I did not get away from the shop before 7.30 pm.

Among the customers there were many titled people and some royalty, one lady in particular springs to mind. Tall, elegant, well dressed and glowing with pearls. She always asked to speak to one of the gentlemen, whom she then asked, in her very refined voice, for her medicine. This was ,in fact, two bottles of Harvey's Bristol Cream sherry wrapped in dispensing parchment. It was always a pleasure handing her the package and her expensive French perfume lingered in the shop after she left. In contrast,there was another character whose smell preceded him into the shop. He was a small, unshaven,untidy man who limped into the shop with

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a grubby empty medicine bottle clutched in his filthy hand. He tried to give this to one of the girls while mumbling through toothless gums "Give it to the governor". It was not a pleasant sight, and in fact the girls were scared of him, hiding in the back of the shop if they saw him coming.

I observed this ritual many times, following the bottle into the dispensary where it was dumped into the rubbish bin, to be replaced by a clean, quickly filled bottle of a linctus. Hastily thrust into that dirty outstretched hand which disappeared into an old army overcoat, the whole apparition shuffled out of the shop followed by one of the girls spraying air freshener all around the counter. No money was ever offered or even asked for.

This ritual continued week after week until my boss was away on holiday. Although not happy with me making up his 'Corf stuff' the tramp reluctantly handed over his grubby bottle. With evil intent I decided to play a trick on this ungrateful man. Replacing part of the cough linctus with Liquid Extract of Senna I assumed that after a few doses he would not dare to cough or return for another bottle.

Several weeks went by and we were beginning to think that we had seen the last of him. Then one day he appeared looking much cleaner and presented the bottle - not to the 'governor' but to the 'young man'. He announced that the last bottle was the best he'd ever had, and in future could it be made up by that young man. After giving him that second bottle, with a slightly larger dose of Senna, we never saw him again. Did he move to pastures new ... or?

There were many other 'characters' that used the pharmacy. There was the tall blonde Swedish professor with her diminutive husband from Lapland who brought the first herd of reindeer over to Scotland, another was the principal of one of the colleges who was always seen wearing a bush hat with chin strap and bicycle clips. One of the local GPs, who was also an anaesthetist at the hospital, was a regular visitor. He would rush into the pharmacy, wearing a long black coat, homberg hat, and thick horn-rimmed spectacles, and thrust a bundle of National Health prescriptions into the hand of whoever was nearest, saying "Deal with them!": no, please, no thank you. This involved deciphering his awful writing, deciding the dosage and amount of drugs the patient required (which he never remembered to do), finding their proper address, and delivering the medicine. We retained the prescription for him to fill in correctly when we were able to catch him. I just hoped he was a better anaesthetist. A psychiatrist in the town sent many of his private patients to the pharmacy with prescriptions for antidepressants, quite often including the item *Vinum Xericum*, in other words Sherry. We knew that we had to decant the Vinum Xericum into a medicine bottle and label it 'One tablesponful to be taken night and morning.' We did not throw away the leftovers!

As the pharmacy was just a short distance from Addenbrookes Hospital, several of the consultants had accounts for their personal requirements and a few had special prescriptions made up for their private patients. The one I remember best involved the use of the Aseptic Laboratory, and was the preparation of a sterile solution of a particular strength of Penicillin, labelled 'For use in the antra only'. More often than not this was ordered mid-morning during the prescription rush to be ready for use in the consultant's afternoon sessions, this meant it had to be prepared during my lunch hour.

One sweet little old lady regularly came in with her prescription for suppositories which were unwrapped and dispensed loose in a box. After a long time her doctor changed the prescription to another brand of suppository. She came into the shop a few days after receiving her new medication and asked to speak to me privately. While I was looking at the faded artificial flowers on her hat she asked me in her frail squeaky voice if it would be easier for her to remove the silver paper before she used the new 'things'. They were making her feel sore and it took ages for the silver paper to come out, bless her.

During my four years in Cambridge there were regular visits by gypsy families in their horse-drawn caravans. The women folk would walk the town with their baskets of hand-made clothes pegs and sprigs of 'lucky heather', most of which was sea lavender They were not allowed in the shop with their wares, but several of them stood on the pavement outside the shop door, pestering the customers that were trying to enter the shop. Although my employer was not amused and moved them on after a short time I thought they were quite colourful, and their pegs were good value.

Mardle - A Norfolk expression for an informal chat between friends.

Author's address: 28 Ringland Road, taverham, Norwich, Norfolk NR8 6TG

Continued from p.33

Oleum Catellorum

To make Oyl of Puppy,which is good for any sprain or bruise.

Take a fat Spannell (sic) puppy if you can get one, but let it be what Puppy it will it must be fat, and dress him as you dress a Pig, then take half a dozen of yeolks (sic) of eggs, and two handfuls of Roman nettles[6] cut very small, three ounces of *Venice* Turpentine, and three pennyworth of Saffron, and beat them all together, and put them into the belly of the Puppy, and sow (sic) it up and roast it, and what droppeth from it save, and it will become perfect oyl for the former uses.[7]

The prolific author William Salmon wrote:

Oleum Catellorum, Oyl of Whelps.

Take Oyl-Olive lb. iiij: Puppy-dogs newly whelped No. ij. Earth-worms washed in white Wine lb. j. boil the whelps till they fall in pieces; then put in the worms, and a little after strain it: lastly, with Cypress Turpentine,

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three fluid ounces: S.V. one fluid ounce.j. perfect the Oyl S.A. (Secundum Artem).

It is Emollient, Anodyne, and Strengthening: good against cold Diseases of the Nerves, Sinews, and Joynts, (sic) Cramps, Convulsions, Palsies, and running Gouts, etc. [8]

In France the noted doctor Nicolas Lemery included the preparation in his *Pharmacopée Universelle* . He used two newly born puppy dogs, 1 lb of earthworms, 4 lbs of common(Olive) oil, 3 oz of clear Turpentine and 1 oz of Spirit of Wine. He believed it to be very good for fortifying the nerves, for sciatica, for paralysis, and for catarrh. It was also useful to warm the shoulders, the spine, and other affected parts. [9]

In England, by this time faith in the efficacy of this preparation was diminishing, and in the second edition of his *Compleat English Dispensatory* printed in 1719 Quincy observed :

Ol. Catellorum, *Oil of Puppies*.

Take two puppies just whelp'd, Earth-worms I lb. Oil of Olives lb. iv. Boil this till the Worms grow crispy, and the Puppies break to pieces: then strain off the Oil, and put to it 3 fluid ounces of *Cyprus* Turpentine, which just dissolve by a gentle Heat with 1 fluid ounce of Spirit of Wine put to it.' This still just preserves its Name in the Shops but is both injudiciously directed, and good for little when made; tho it stands commended for an *Emollient*, and many good Qualities, which never could be found in it by Experience.[10]

However, it is still listed in Motherby's New Medical Dictionary of 1775:

CATELLORUM. (Oleum.) It is olive oil in which young whelps have been boiled until their flesh separates from the bone; after which is added thyme, marjoram, etc. which stand together in the sun, and then the oil is strained for use.[11]

So far I have been unable to find any later contemporary references to this oil but I did find it mentioned in a recently published little volume *The Curious Cures of Old England*. This is a fascinating book but, unfortunately, contains a number of inaccuracies, for example:

Other sixteenth-century doctors said that wounds should be treated directly with *Oleum Catellorum* – live cats boiled in olive oil, …[12]

This is surely a salutary lesson to check references carefully. Unfortunately, the author does not give a reference to the source of his information. Here we have an example of the danger of historians writing on a subject of which they have no basic knowledge.

We may smile at the gullibility of people who placed their faith in such an extravagant remedy, but we must remember that a product by the name of 'Dog Oil' was on sale in pharmacies throughout the country until the Trade Descriptions Act made it illegal to offer it for sale under this name as dogs were not involved in its manufacture. It is interesting to speculate as to whether an inherited folk memory suggested this name for a preparation said to relieve muscular aches and pains.

Author's address: Billjaxbaggins@aol.com

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Medicinal collections from the Bulgarian Renaissance

Dr Jeny Antonova

Sofia, Bulgaria

A survey analysed the state of pharmacy during the Bulgarian Renaissance (17-19th century) by using medicinal collections of various origin and content dating from this period. The Bulgarian Renaissance was a time of socio-economic development and national integration among Bulgarian people under Ottoman rule. Medicine and pharmacy also progressed: trained physicians and pharmacists of various nationalities came to the country: Greek, Turkish, German, Austrian, Armenian, Russian, and Italian. As a result of that as well as following the rapid cultural progress, pharmacy advanced quickly. The range of medicinal products was enriched, drugstores or similar stores were gradually established, pharmaceutical education was introduced for the first time, and the state took its first steps towards legal regulation.[1]

A number of medicinal collections date back to the Bulgarian Renaissance period: the medicinal collection of grandfather Iliicho Danailow,[2] that of Keffalow,[3] of father Gregory,[4] as well as medicinal collections from the towns

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influenced by Arabian medicine, for example there are very many substances whose names have Arabic origin. So they are probably similar in origin and are derived from the same prime sources of information, which the respective authors used selectively.

Almost all of them offer various recipes for headache, fever, toothache, physical strength, rheumatism, old and new cough, bad heart, sweet ointment. Medicinal plants prevail, mineral products are also used, as well as some animal products including waste matter such as gall bladder, donkey milk, rabbit fat, sheep suet, etc. The medicines are applied in various medicinal forms – infusions, compresses, baths, powders and ointments. The folklore means of disinfection are extremely interesting, as they used herbs rich in camphor and essential oils with a strong antiseptic effect, containing aldehydes, ketones and alcohols. Among the herbs are *Artemisia absinthium*, *Matricaria chamomilla*, *Tanacetum vulgare*, and *Melilotus officinalis*. They are employed to make infusions for external use, incensing herbal mixtures, as well as brooms for sweeping evil spirits, fleas and other insects away from the house.

Poisonous herbs were handled skillfully and with great care by folk healers: the painkilling effect of *Hyoscyamus niger*, was widely used and carefully infused for inhalation.

The medical prescriptions reveal a very comprehensive range of symptoms and illnesses. The degree of rationality in some of the medicinal methods, which modern science easily provides with objective explanation, is noteworthy. For instance, numerous revulsive remedies were used for the treatment of rheumatism – chilli peppers, brandy, and seeds from *Sinapis nigrae*. For internal use there were: anti-inflammatory substances from *Salix alba*; for the treatment of colds the taking of hot wine was recommended; for the treatment of heart diseases *Helleborus odorus*; hypertonia was treated with *Viscum album*; for the treatment of kidney diseases the diuretic effect of *Zea mays* was used; for gastric ulcer the alkaline reaction of white ash (containing Na_2CO_3, $MgCO_3$, $CaCO_3$) diluted in water; Parkinson's disease was treated with *radix Atropae belladonnae* infusion – a common cure, applied later as well and known worldwide under the name Cura bulgara.[7] Also widely used were *Aqua Rosae*, Bulgarian yoghourt[8] and the antibacterial effect of garlic.

Conclusion

The preserved medicinal collections allow the objective evaluation of the state of pharmacy during the Bulgarian Renaissance. The development of natural science and pharmacy in particular were not marked with any significant breakthroughs of global importance, but was quite reasonable for the time and was driven by the combination of Bulgarian traditions and experience with the acquired mundane knowledge of the ancient and the feudal world. They all seem to lend support to the conclusion that realism was a characteristic feature of Bulgarian pharmacy during this period. Mysticism and superstition were relatively rarely resorted to, precedence was given to real treatment with suitable and not so suitable medical plants, minerals and animal products.

Author's address: Dr Jeny Antonova Faculty of Pharmacy, Department of Social Pharmacy, Dunav 2 str., Sofia 1000, Bulgaria; e-mail: jantonova7@yahoo.com

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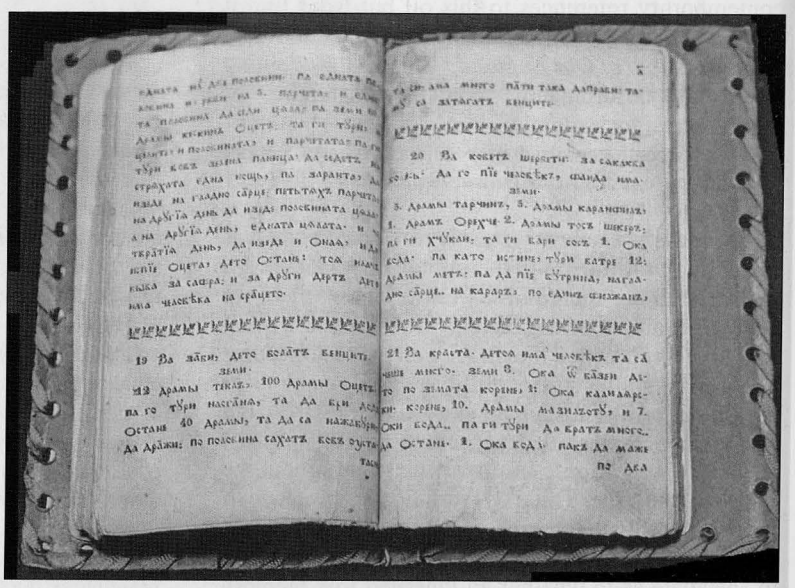

Pages from the first printed Bulgarian medicinal collection, published in Bucharest in 1845.

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Elsie Maud Inglis 1864–1917

Dr Peter M Worling
Edinburgh

Her body lay in state in St. Giles Cathedral, the Queen sent a message of condolence to her sister, her funeral in Edinburgh was followed by a Memorial service in Westminster. This was attended by members of Parliament, government ministers, British diplomats, heads of the Red Cross and army medical services, representatives of the French, Italian, and Russian embassies and the Serbian, Belgian, and Rumanian Legations. Suffragettes attended along with officers of the army and navy and members of the House of Lords and their ladies.

Yet today how many know of the story of Dr Elsie Inglis?

Childhood

Elsie Maud Inglis was born at Nani Tal, a hill station in India, on the 16 August 1864. Her family had a long connection with the Indian subcontinent. Her grandfather David was a writer to the East India Company and after the Mahratta war was placed in charge of the Peshwa Territories. Her father John, originally went out to India as a magistrate in Agra and after the Indian Mutiny he was appointed in 1863 as the Chief Commissioner of Oude, retiring from there in 1876. He decided to settle in Edinburgh, because their eldest daughter had made her home there after her marriage, and they bought a house at 10 Bruntsfield Place.

Elsie was one of nine children but she developed a very close relationship with her father. It was not unusual at that time for daughters to receive a basic education only, because they were expected to stay at home and look after their parents. John Inglis believed that his daughters should be allowed equal opportunities with their brothers and be given a good education. The two younger sisters were sent to the 'Charlotte Square Institution for the Education of Young Ladies' at 23 Charlotte Square, Edinburgh.

After finishing her secondary education she went to Paris in September 1882 to complete her education, in a party headed by Miss Gordon Brown and seven other girls. Shortly after her return her mother died of scarlet fever. This was a great shock to her father and the family. They moved to a smaller apartment in Melville Street, Edinburgh, where Elsie took charge of the household and the responsibility of looking after her father.

Medical Training

Elsie decided that her vocation was in medicine and this decision was fully supported by her father. This was a brave decision because although women were being admitted to the degree of Doctor of Medicine, there were many obstacles in their path. Only a few hospitals would accept women for their clinical work, mixed classes with male students were not allowed and women had great difficulty in getting effective teaching in anatomy.

Elsie - in Scottish Women's Hospital Uniform

The Edinburgh School of Medicine for Women was established in 1886 by Dr Sophia Jex-Blake and this is where Elsie began her studies. Jex-Blake was very autocratic and after a number of disputes with her students in which Elsie was involved, she left the School of Medicine and with the help of her father established, in 1889, the Medical College for Women at 30 Chalmers Street, Edinburgh. This had a short life because in 1892 the Scottish Universities started to accept women students. In February 1891 Elsie went to Glasgow to study surgery. She was fortunate to be given the opportunity to work under William McEwan who was one of the best surgeons of the day. He was sympathetic to the aspirations of women to become doctors and surgeons and she successfully passed the examinations for the 'Triple Qualification' on the 4 August 1892 (Licentiate of the Royal College of Physicians and Surgeons of Edinburgh and Licentiate of the Faculty of Physicians and Surgeons of Glasgow.)

In order to gain further experience she moved to London to work as a house surgeon under Dr Elizabeth Garrett Anderson at the Hospital for Women in Euston Road. With only women on the staff she was able to practice all aspects of surgery, in a very busy hospital. This gave her valuable experience for the future. In November 1893 she joined the staff at the Rotunda in Dublin. This was a

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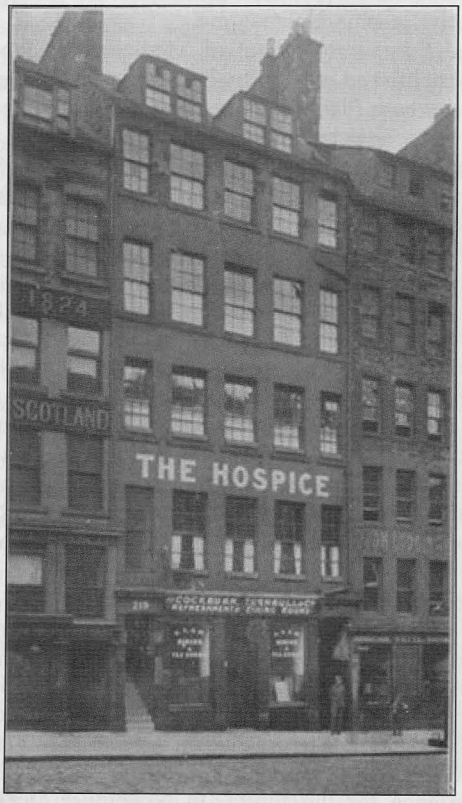
long established 'Lying-in Hospital' which trained practitioners in midwifery. When she had finished her training, she returned to Edinburgh and opened up a medical practice in partnership with a friend, Dr Jessie McGregor. This was first in Atholl Place and then at 8 Walker Street, Edinburgh. It was soon after this that her father died.

Practice in Edinburgh

The experiences that she had during her training to become a doctor and subsequently in practice, made her determined to improve the position of women in society. The law that a wife could not undergo an operation without her husband's consent had led to cases of unnecessary suffering and death. This angered her and made her believe that most of the laws were written for the benefit of men. It led her to work for advancing medical treatment for women and improving women's political influence.

She developed a very successful medical practice with her partner at Walker Street. In addition, most mornings she gave her services at one of the four voluntary city dispensaries. She had held the idea for some time of opening a women's hospital. As a first step she formed the Medical Women's Club which met regularly at her surgery. She learned in 1899 that Dr Jex-Blake was retiring and there were plans to extend the Edinburgh Hospital for Women. She offered to buy it provided her Women's Club held a 50% interest on the management. This offer was refused and as a result she established an appeal for funds and persuaded the owners of 11 George Square to let her have the building for a nominal rent, where she opened her Nursing Home for the Poor in 1901.



The Hospice, High Street, Edinburgh

They only had a short lease and she also believed that it would be more useful to have premises in one of the poorer quarters of the city. The hospital was moved and in June 1904 opened at 219 High Street, Edinburgh as The 'Hospice'. The services available were expanded with a gynaecological department, eight maternity beds, an operating theatre, a dispensary and an accident department. It was also a district centre for midwifery. Elsie was recognised by Edinburgh University as an extramural lecturer in gynaecology and she was recognised by the Central Board of Midwifery for training midwives. This was one of the only centres in Scotland for training nurses for the CMB examinations and for training doctors.

Despite her many commitments she was appointed as Joint Surgeon at the Edinburgh Hospital for Women, now known as the Bruntsfield Hospital, despite objections from Jex-Blake. Following this, in 1907 she was appointed Senior Consultant. One of the members of the committee, Margaret Holdsworth died and left a sum of £3,000 for services in gynaecology and midwifery. The money was used to unite the two hospitals. Bruntsfield was enlarged so that it could concentrate on the medical and surgical cases while the Hospice specialised in maternity and child welfare. After the rebuilding was completed in 1911, Elsie was able to show Queen Mary round the new premises.

Women's Suffrage

During this period she continued to pursue her political objectives. She was a member of the Women's Liberal Association and its Vice-President for sixteen years. Her interest was in improving the status of women and she was recognised as a clear and forthright speaker, frequently being asked to address local meetings. She left the Liberal Party because she felt that she could make a greater impact by not being associated with any one political party.

She was a passionate believer in women's suffrage. The Edinburgh branch of the National Society for Women's Suffrage was formed in 1894 and she became a member. The suffrage societies were scattered throughout Scotland and there was a need for a central organisation. To fulfil this, a Federation of Scottish Suffrage Societies was formed in 1906 and she agreed to be the Honorary Secretary and in this role played an active part in its work. She was appalled by the actions of the more militant societies in the South and the Scottish Societies were only prepared to take lawful action to further their cause.

The Great War

When war was declared in August 1914, Elsie was 50 years of age. One of the arguments that had been used for withholding votes from women was that they could not take part in a war. This attitude prevented women volunteering for many jobs where they could have been of use, such as cooks at the military

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training camps set up around the country. Voluntary Aid Detachments (VADs) were formed in 1909 where women volunteers were taught first aid, stretcher drill, and how to set up a temporary hospital. Elsie was the Commandant of the 6th Edinburgh VAD and she had been responsible for organising their training. She believed that they could be used as probationers in military hospitals to assist the nurses and she visited the War Office to discuss her proposals; but she was brushed aside and told by one official 'to go home and sit still'.

By this time the Women's Suffrage movement was very well organised. They had a central office; they had political experience, trained speakers and a group of well organised women working together. They decided that they should support the war effort and discontinue their suffrage campaign for the time being. Elsie discussed the position with her family and friends, and the committee of the Scottish Federation. They decided that as the offices at 2 St Andrews Square would not be needed for the duration of the war that this would be used as a centre for a new organisation to help the war effort, named The Scottish Women's Hospitals for Foreign Service (SWH). The name was carefully chosen because they realised that they would have to seek the help from many people and they didn't want to antagonise any one with a reference to the suffrage movement. She went to London to explain her proposal to the National Union of Suffragettes and they accepted her plans and started to help with fund raising.

The Scottish Women's Hospitals

From the beginning Elsie insisted that the hospitals must be as well equipped and staffed as any in the field. The first task was to raise funds for the enterprise and an appeal was launched in the Journal of the Federation with a target of £50,000.The first £1,000 was donated on the 30 October 1914 and within a short time the sum had reached £200,000.

The committee offered the Red Cross a fully equipped hospital staffed by women. The aim was to prove that women could run a frontline hospital unit, with all that entailed and show that they were not fit only for paediatrics and gynaecology. However the Red Cross turned down the offer and it was decided to make the same offer to the Allied Governments, who were not resistant to help from women.

The Belgian Consul in Edinburgh, Professor Sarolea was enthusiastic and arranged for his brother, Dr Leon Sarolea, a member of the Belgian Parliament, to work with Elsie to organise a hospital unit to go to Belgium. Before the arrangements could be finalised, Belgium was invaded by the German army and the plans had to be changed. A unit under Dr Alice Hutchison went out to establish a hospital in France. When she arrived in Calais she found conditions were very bad. There was an influx of Belgian refugees and an outbreak of typhoid fever among the swollen population. She and the unit stayed to help the overstretched medical facilities.

The second SWH unit was sent out to work with the French Red Cross at the Abbaye of Royaumont. This team consisted of a junior doctor, a nursing sister and ten nurses. One of the nurses described the conditions when they arrived. There were no fires, no hot water and no furniture. They had to scrub out the whole building, install a new boiler in the kitchen, fit taps, lavatories, electric lighting and all the theatre sinks. Despite these problems they opened four wards, an operating theatre and were soon at work nursing French wounded.

Hospital at Royaumont

Dr Inglis was responsible for obtaining all the equipment that was required. The items then had to be shipped overseas. She obtained the full co-operation of both the Secretary of State for Foreign Affairs and of Lord Robert Cecil of the Foreign Office, as without their help it would have been impossible to keep the hospitals supplied.

The Balkans

The war in the Balkans was complicated by the political situation. The Bulgarians were keen to expand their territory and were waiting to see which side would be the more successful. The Greek Government sympathised with the Allied cause but King Constantine was married to one of the Kaiser's sisters and he supported the Central powers.

Austria-Hungary invaded Serbia in order to create a corridor through to Turkey and surround Russia. This invasion was repulsed by the Serbian army in October 1914 and the Austrians retreated, leaving behind filthy hospitals crowded with both Austrian and Serbian wounded. These conditions led to an outbreak of typhus in January 1915. A SWH unit was sent out to Serbia with Dr Eleanor Soltu, arriving at Kraguievatz in the North of Serbia early in January, where they soon had three hospitals under their control. In April 1915 Dr Soltu contracted diphtheria and a telegram was sent to Elsie asking her to come

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out and take charge. She was very glad to have an opportunity of being directly involved in tending the sick and left immediately, arriving at the end of April. By the time she arrived the worst of the epidemic was over and spring was starting, so the units had a period of quiet in which to re-organise. The plan which was worked out with the army was to establish three hospitals in the North with the idea of containing any infectious outbreaks, when the Austrian army invaded again and three SWH were established. Dr Alice Hutchison had arrived with a complete tented hospital and this was established at Valjevo. Two others were opened at Lazaravatz and Mladanovatz.

Dr Inglis took charge of the fever hospital at Kraguievatz. The Serbian Government gave her a free railway pass so she could travel between all the units that were now operating. In recognition of the work she and the nurses were doing for the Serbian army they erected a fountain dedicated to her at Mladanovatz close to the hospital. This was symbolic, as she had talked about the need to raise funds so that a fountain could be built in every village to provide pure water to prevent the many epidemics which occurred regularly.

The Second Invasion

On the 22 September 1915 the Bulgarian army was mobilised and together with the Austrian army invaded Serbia in November. The Serbians had asked the Allies for help and although some army units were sent out, they did not arrive in time to give support. The forward hospital units were forced to evacuate and centred on Kraguievatz. This hospital was built for 400 patients. It already had 900 and this shortly increased to 1,200. There was a great fear of a new typhus outbreak because of the terrible overcrowding and the lack of good food. Elsie decided that this was where they would stay with the wounded, come what may. She and Dr Holloway, who had been in charge at Mladanovatz, together with a number of nurses moved into the Czar Lazar hospital in the town. The others joined the retreating army and the refugees who faced an appalling journey in winter over the Albania mountains.

Nurses Return from Serbia

The German army entered the town in November and the doctors and nurses were taken prisoner, but they were allowed to continue working. This involved not only nursing and the medical treatment of the sick but, because the German army provided very little food, the nurses in their spare time tramped the country with their baskets collecting eggs, vegetables, and anything they could find to feed the patients. The team remained for three months living and sleeping in one room. By the 9 February the hospital was finally cleared with the last of the severely wounded being transferred to Austrian hospitals. The remaining members of the unit were allowed to leave and on the 11 February 1916 they started the long and uncomfortable journey home, by way of Belgrade, Vienna and Zurich, under an armed guard.

On her return Elsie immediately started work again. Fundraising was needed to supply the overseas hospitals. She spoke at many meetings to describe the work that they were doing and to help raise contributions. Stores had to be contracted for and shipped out together with motor transport and this had to be done with the co-operation of the Government. There was also the need for new hospital units to be prepared. She wanted to send out a complete hospital to Basra to serve the troops in Mesopotamia but the War Office refused permission. SWH units were sent to Corsica to serve the refugees that fled there from the Balkans and to Malta. At this time she was decorated with the Order of the White Eagle by the Crown Prince of Serbia.

The Russian Front

In Russia two Serbian Divisions were formed from Austro-Serbs. In many cases they had been forced to join the Austrian Army, but as they were not prepared to fight against their own countrymen they had either been captured, or had come over to the other side. It was decided to send a Scottish Women's Hospital unit to serve with the first Serbia Division, with Elsie Inglis in charge.

They sailed from Liverpool on the 31 August 1916. The party consisted of 16 vehicles, 50 tons of equipment and 75 ladies, all quite uncertain of where they were going or how they would get there. Nine days later they arrived at Archangel and a further nine days after that at Odessa. There were already more than a thousand wounded at Odessa and they were asked to stay there and help. Elsie believed however that they would be more useful serving as a field hospital and they were instructed to go on to the Romanian front at Medjidia. They established a hospital there in an old barracks and a second hospital at Bulbumic, close to the firing line. These two 100-bed hospitals were working within twenty-four hours after their arrival.

The units were able to operate only for three weeks and on the 20 October 1916 they were ordered to retreat. The main part of the hospital went by train to

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Galatz, others used the motor vehicles and they eventually met up in Braila on the 26 October. There they found eleven thousand wounded being attended to by six doctors and one surgeon. The group that had gone on to Galatz were recalled and a hospital set up. The Russian army defences were along the River Danube and held for a time, but the Austrian army crossed the river and Bucharest fell on the 6 December. Once again the hospital was faced with pulling back and this time went to Galatz where a hospital was set up in slum buildings by the quay with no lighting or proper drainage.

They had to deal with one thousand casualties each day. The most serious were treated on the spot, the others sent back to Reni or Odessa but the volume of work was impossible to handle. Fortunately a section of the British Naval Armoured Car Squadron arrived in Galatz and Surgeon Lieutenant Maitland Scott and four male orderlies joined the team. Once again on the 4 January they were forced to move, this time to Reni, where there were clean buildings with quarters for the staff near at hand.

In March 1916 came the start of the Russian Revolution. This created a number of difficulties throughout the region. Soviets of the soldiers were set up and the patients took over the running of the hospitals causing confusion and loss of efficiency. This did not happen at the Scottish Women's Hospital where Elsie Inglis kept a firm but kindly discipline over the whole operation.

During the summer the SWH had been dealing mainly with the sick and wounded from the Russian army, although their primary aim had been to serve with the Serbian Division. At the end of August the hospital was moved to Hadji-Abdul to join the Serbian army again. They had suffered very severe casualties during the fighting because they were the backbone of the Russian army. The Russians recognised this and wanted to keep the remains of the Serbian army committed. It was obvious, since the Serbian army was bearing the brunt of the fighting, that further action would lead to more heavy casualties and Elsie determined to have the Division withdrawn.

The London Committee, concerned at the position of the hospital in revolutionary Russia, sent a telegram asking them to withdraw and return home. Elsie replied that she could not leave unless the Serbian army units were also withdrawn. Eventually, after protracted negotiations through the War Office the Russians agreed to the withdrawal of the Serbian Army.

The London Committee received a telegram in November confirming that they were on their way and all was well except Elsie herself. This was the first inkling they had that she was not well. In fact she had collapsed in September and at that time had promoted the cook Mary Milne as an officer to help run the unit. Mary was a very efficient and mature member of the staff who helped to carry some of the burden of the organisation.

The return journey was as difficult as the outward trip had been. They went on a fourteen-day journey by train to Archangel, crossing revolutionary Russia. There were many problems and difficulties but they set sail and arrived in Newcastle on the 24 November. Elsie had been very ill during the voyage but she insisted on standing on the deck the next day to say farewell to the Serbian officers on the ship. She also insisted on walking down the ship's gangway to be taken to the Station Hotel, Newcastle where, with many of her family around her, she died on the 26 November 1917. She was buried with full military honours at the Dean Cemetery, Edinburgh and her coffin was born by officers of the Serbian army.

This paper was presented at the BSHP Spring Conference, Wakefield, 31 March 2007.

Author's address: Dr Peter M. Worling, 29 Fernielaw Avenue, Edinburgh EH13 0EF
Email: p.worling@virgin.net

Notes

Over one thousand women were eventually engaged in the Scottish Women's Hospitals as doctors, nurses, orderlies, auxiliary staff and drivers coming from many different nations. Fifteen died in the operation from infection or injury.

In February 1918 the vote was granted to woman over 30 years provided they or their husbands were householders.

The Bruntsfield Hospital

This was developed from the Edinburgh Provident Dispensary for Women and Children by Dr Jex-Blake and opened in 1878 at 73 Grove Street, Edinburgh. After she retired in 1899, the hospital committee acquired the home of Dr Jex-Blake to expand the hospital and it became known as the Bruntsfield Hospital. In 1910 it was amalgamated with The Hospice founded by Dr Elsie Inglis.

The Elsie Inglis Memorial Maternity Hospital

The surplus funds left over when the Scottish Women's Hospital was closed were used to open this hospital in 1921, as a memorial to her work.

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Records

Major Accessions to Repositories in 2005 Relating to Pharmacy and Chemistry

The National Archives in its annual *Accessions to Repositories* exercise collects information from over two hundred record repositories throughout the British Isles about manuscript accessions received in the previous twelve months. The information is then edited and used to produce a number of thematic digests which are distributed for publication in a number of learned journals and newsletters, as well as being made available in full on TNA's website (www.nationalarchives.gov.uk).

The information is also added to the indexes of the National Register of Archives (NRA), the central point for collecting and disseminating information about the location of manuscript sources relating to British history outside the public records. The NRA, which currently contains over 44,000 lists and catalogues of archives, can be consulted at the National Archives, Kew, Richmond, TW9 4DU. Alternatively, searchers may access the indexes to the NRA and certain linked on-line catalogues via the website. Limited and specific enquiries can be dealt with by post, or email (enquiry@nationalarchives.gov.uk).

Dates for records in this digest are given when known, but these are covering dates which do not necessarily indicate the presence of records for all intervening years. Records have been included regardless of whether the deposit has yet been fully catalogued, and readers are advised to check with the relevant repository as to whether this, or any other factors, may affect access to the documents.

Cheshire and Chester Archives and Local Studies, Duke Street, Chester CH1 1RL: Dispensing chemist's prescription book 1837-41 (ZCR 6872)

Dorset History Centre, Bridport Road, Dorchester, Dorset DT1 1RP: George Henley, chemist and druggist, Lyme Regis: prescription books 1881-1924 (D/LRM); Chemist, Weymouth: prescription books 1944-1953 (D1991)

Guildhall Library, Aldermanbury, London EC2P 2EJ: B Hooper and Co, chemists, London: prescription ledgers, accounts and formula book 1898-1973 (Ms 36582-7)

Jersey Archive, Jersey Heritage Trust, Clarence Road, St Helier, Jersey JE2 4JY, Channel Islands: GHF Flory, pharmacist, Jersey: cash books 1940-1989 (JA/1014)

Nottinghamshire Archives, County House, Castle Meadow Road, Nottingham NG2 1AG: Robert I Clarke, chemist, Nottingham: records incl prescription books and poison registers c1879-1977 (Acc 6837, 6883); Tom Marris, chemist, Worksop: records 1884-1941 (Acc 6761)

Sheffield Archives, 52 Shoreham Street, Sheffield S1 4SP: John Dale, chemist, Sheffield: recipe book, incl medical, cosmetic and household recipes early 20th cent (2005/68); Wallace Heaton (City Sale) Ltd, photographic chemists, Sheffield: register of directors, members etc (1918-1984), share books (1918-1972), directors minutes (1964-1976) 1917-1989 (2005/125 and Add 1)

Wandsworth Local History Service Library, Battersea Library, 265 Lavender Hill, London SW11 1JB: Farmer's Chemist, Putney High Street: additional records incl prescription books and poison registers c1900-50 (Acc05/04)

West Yorkshire Archive Service, Calderdale, Central Library Northgate House, Northgate, Halifax HX1 1UN: H K Woodward Ltd, chemists, Halifax: prescription books 1927-65 (WYC:1273)

Worcestershire Record Office, County Hall Branch, County Hall, Spetchley Road, Worcester WR5 2NP: H Talbot Cooper, dispensing and agricultural chemist and optician, Upton-on-Severn: prescription books, poisons registers and notebook 1889-1945 (BA14176)

Science Museum Library, Imperial College Road, London SW7 5NH: Lyon Playfair, 1st Baron Playfair of St Andrews, chemist: out letter book as secretary, Science Division, Department of Science and Art 1854-1856 (Z 77)

Wellcome Library for the History and Understanding of Medicine, Archives and Manuscripts Section, 210 Euston Road, London NW1 2BE: International Union of Pharmacology: additional records c 1961-2000 (SA/IUP)

Manchester University, John Rylands Library, Oxford Road, Manchester M13 9PP: Manchester University, Department of Chemistry: records (Acc 2005/018)

Bristol Record Office, 'B' Bond Warehouse, Smeaton Road, Bristol BS1 6XN: Oliver Pragnell & Co, oil and colourmen, Bristol: business papers and personal papers of Mervyn Oliver Pragnell 20th cent (42954)

Cumbria Record Office and Local Studies Library, Whitehaven, Scotch Street, Whitehaven, Cumbria CA28 7NL: Albright & Wilson Ltd, chemical manufacturers, Whitehaven: corresp rel to sale of land at Ladysmith Pit, papers and plans rel to Marchon, shipping and the development of Whitehaven harbour, and other records 1952-1995 (YDB 59)

Glamorgan Record Office, Glamorgan Building, King Edward VII Avenue, Cathays Park, Cardiff, Glamorgan CF10 3NE: ICI Chemicals & Polymers Ltd, Dowlais: factory reports 1942-1958 (D377)

Hertfordshire Archives and Local Studies, County Hall, Hertford SG13 8EJ: Imperial Chemical Industries Ltd, Plastics Division, Welwyn Garden City: further records 1932-1950 (Acc 4184)

Leicestershire, Leicester and Rutland Record Office, Long Street, Wigston Magna, Leicester LE18 2AH: Hawley & Johnson Ltd, dyers and finishers, Leicester: records incl sample books of yarn and papers rel to service of Lewis Dilkes as a chemist c1930-1981 (DE6882)

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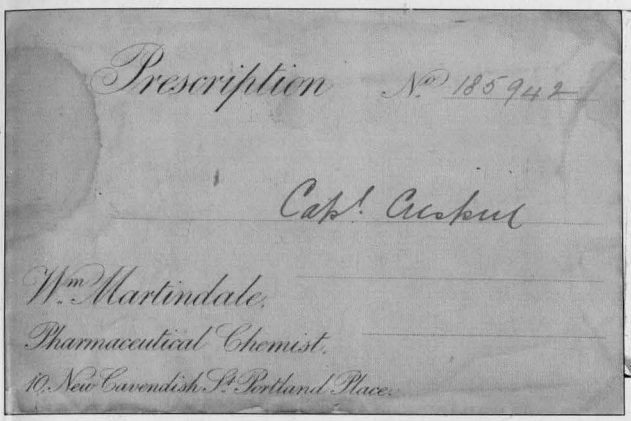
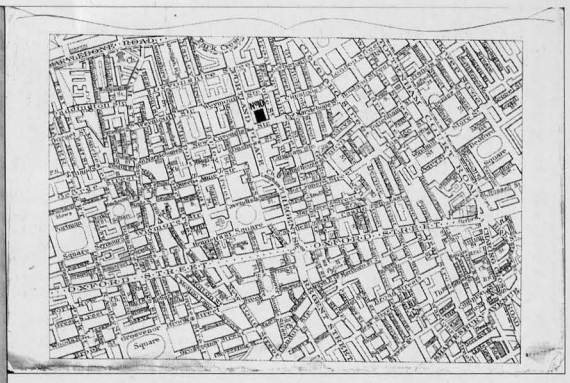
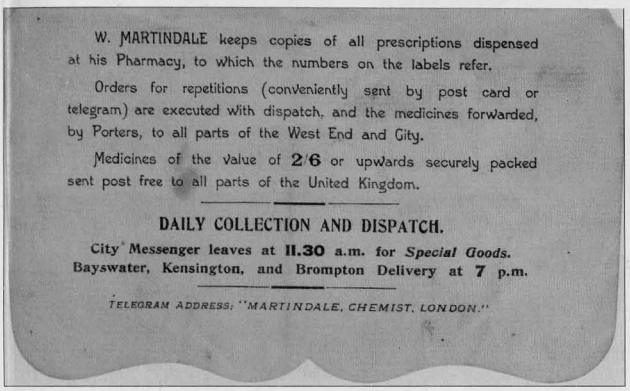


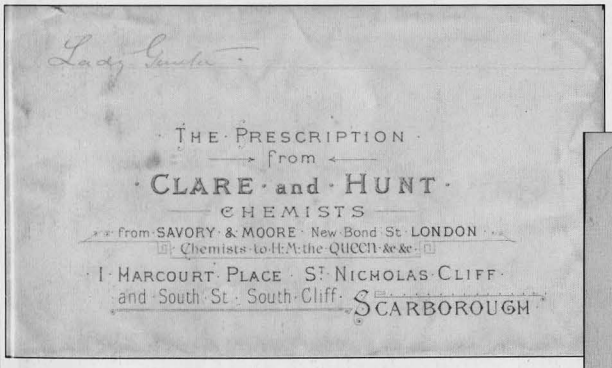


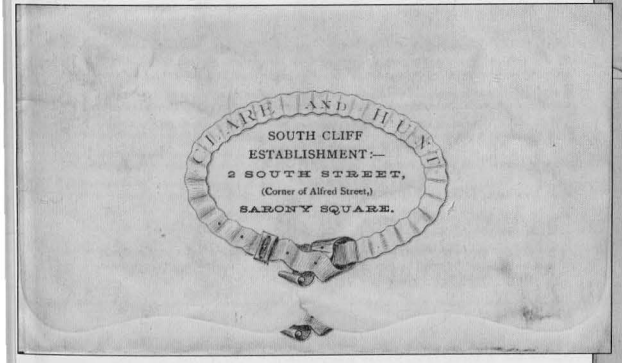


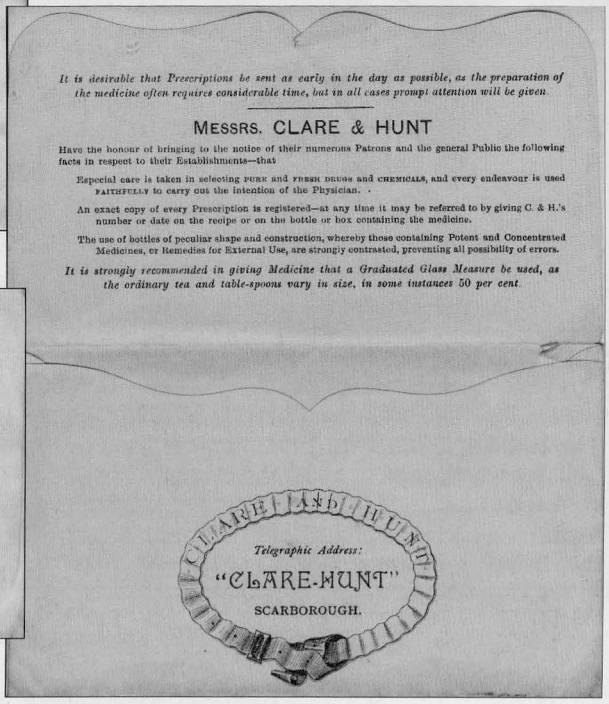
Two prescription envelopes from the collection of the late Arthur Wright, former editor of the *Chemist & Druggist* and the *Pharmaceutical Historian*.

Above left, front of envelope from Wm Martindale, Pharmaceutical Chemist, 10 New Cavendish Street; left, envelope back; above, map under flap showing location of pharmacy in London's West End. He died in 1902 and was succeeded by his son, William Harrison Martindale.

Below left, front of envelope from Clare and Hunt, Chemists, 1 Harcourt Place, St Nicholas Cliff, Scarborough; bottom left, envelope flap showing South Cliff Establishment, 2 South Street, Sarony Square; below, under flap, a summary of their services. John Clare registered C&D in 1882 and Harold Edward Hunt registered 1896. Clare & Hunt Ltd were still in the Register of Premises in 1936.







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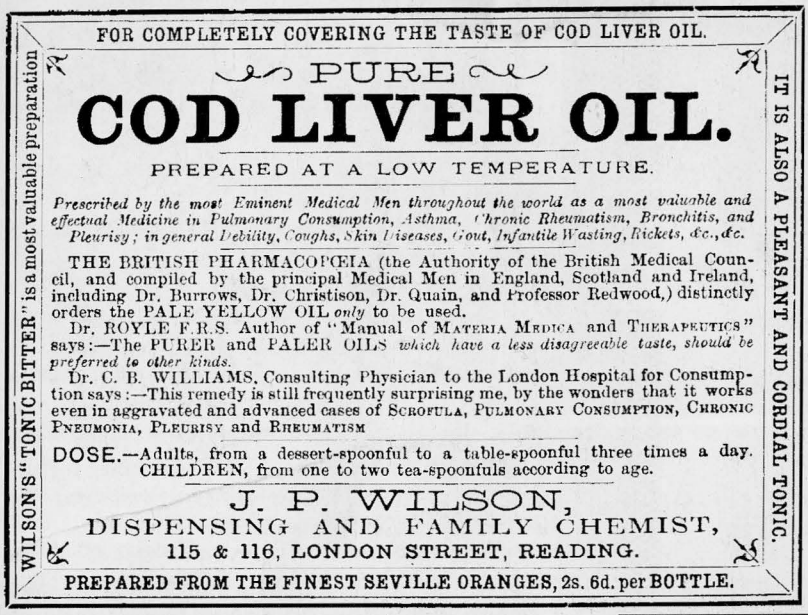
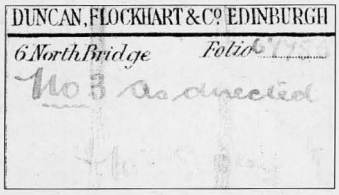
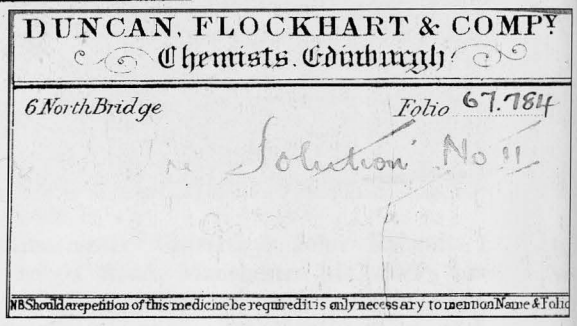


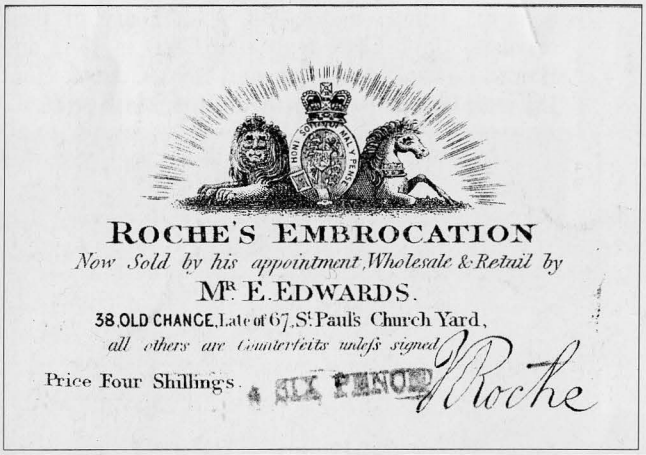
Labels from a collection of the late Arthur Wright, actual size.

Left, JP Wilson, of Reading, Cod Liver Oil, with an advertisement for Wilson's Tonic Bitter round the edge and medical testimonials;

Below, two prescription labels from Duncan Flockhart & Company, North Bridge, Edinburgh.







Roche's Embrocation, sold by Mr E Edwards of 38 Old Change, London, and apparently signed by J Roche and overprinted with a price increase to Four Shillings & Six Pence. The arms are a version of the Hanoverian Royal coat of arms from the early 19th C.

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British Society for the History of Pharmacy

840 Melton Road, Thurmaston, Leicester, LE4 8BN
Tel: 0116 264 0083, Fax: 0116 264 0141, Email: bshp@associactionenterprises.com

The British Society for the History of Pharmacy was formed in 1967 under the aegis of the Pharmaceutical Society of Great Britain, having originated from its History of Pharmacy Committee.
BSHP seeks to act as a focus for the development of all areas of the history of Pharmacy, from the works of the ancient apothecary to today's ever changing role of the community, hospital, wholesale or industrial pharmacist.

Aims

Promotion of historical studies related to pharmacy.
Advancement of knowledge and propagation of understanding of the history of pharmacy.
Publication of the research work of pharmaceutical historians.
Preservation of pharmaceutical artefacts and historic pharmacies.
Support for the work of relevant museums and offering advice on establishment of other pharma-ceutical exhibits and on the preservation of pharmacies.
Co-operation with related professions and local historians on medico-pharmaceutical topics of mutual interest.

Pharmaceutical Historian

The *Pharmaceutical Historian* has been published since 1967, at first intermittently, but on a regular quarterly basis from 1972. Issues generally comprise 16 pages and cover.
An index for the years 1967-1995 was published in 1998. An index for 1996-2000 was published in 2000 and for 2001-2005 in December 2005.
Papers, short communications and letters in English on any aspect of the history of pharmacy are welcome and should be sent to the address above or by email to *bshpeditor@associationhq.org.uk*
Any illustrations are converted to monochrome for printing. Further details of requirements can be found on the website *www.bshp.org* under Publications.

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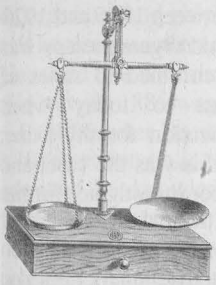

PHARMACEUTICAL HISTORIAN

Editor: Ainley Wade, BPharm, MPhil, FRPharmS, FSP
840 Melton Road, Thurmaston, LEICESTER LE4 8BN

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Diary

Wednesday 20 February 2008 (note changed date)
'Cannabis – From Antiquity to Tomorrow' by Prof. Tony Moffat, School of Pharmacy, London. At Lambeth, 6.30 p.m.

Wednesday 7 May
'Indigenous people and drug development: From Local knowledge to new medicines' by Prof. Michael Heinrich, School of Pharmacy, London. Lambeth, 6.30 p.m.

Wednesday 24 September
To be notified.

Wednesday 19 November
To be notified.

BSHP Annual Spring Conference
Friday 4th to Sunday 6th April 2008
Details of the Spring Conference, to be held at Worthing, will be circulated to members later.

Launch of the Evolution of Pharmacy Resource Website

At the first evening meeting on 10th October the BSHP launched a new set of historical information sheets. The series entitled *The Evolution of Pharmacy* is being developed by the Society with help and support from the RPSGB and will be available on their website alongside the Museum Fact-sheets.*

The first set of pilot sheets demonstrated were well received by the representatives of Lambeth, some Schools of Pharmacy and other pharmaceutical organisations with an interest in education, who had been invited to give their first impressions.

Themes are treated at three levels: a general overview (Level 1); a more detailed look at specific areas (Level 2) and in-depth material on one component (Level 3). For example, the origin of medicines (L1), antibiotics (L2) and penicillin (L3). Topics already covered at Level 1 include *What is a pharmacist?*; *Evolution of the Pharmaceutical Society*; *The development of medicines*; *The origins of dosage forms* (which cross links to the existing museum sheets on dosage forms); and *The control of harmful substances*.

If the pilot sheets are frequently accessed and prove useful to tutors and students it is hoped to gradually build up the lower levels of the existing themes and expand the topics covered. The editorial panel welcome any offers of help from members with special interests in either preparing sheets or supplying lecture or research material which can be converted into sheets.

The meeting then heard a lecture by our President Mike Jepson on *The Evolution of Pharmaceutical Education* which it is hoped to convert into a fact sheet in the near future.

* The Evolution of Pharmacy information sheets can be accessed at **www.rpsgb.org/informationresources/museum/resources/evolution.html**

Exploring the new resource: (*from left to right*) Heena Bhakta, BPSA President; Graham Phillips, Chair of the RPSGB's Education Committee; Samantha Butler of the Association of Pharmacy Technicians UK; and Briony Hudson, Keeper of the Museum Collections at the RPSGB.
Photo courtesy RPSGB

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'Shotgun therapy': The understanding and use of thyroid organotherapy in Britain, 1890-1925

Christopher K Tam BSc
Medical Student, Faculty of Medicine, Imperial College, London

The hormone concept is a relatively new facet of medicine, arguably first proposed by the French physiologist Claude Bernard, who said in a 1855 lecture that 'the liver had an external secretion (bile) and an internal one of sugar which passes directly into circulation'.[1] In 1859 he described the spleen, adrenals, and thyroid as glands with an exclusively internal secretion. However it wasn't until the turn of the 19th century that these secretions became the subject of a new scientific discipline known as endocrinology. At the same time, there was a rising interest in the use of endocrine extracts as therapy – also known as 'organotherapy'. Merriley Borell, a medical historian from the University of California, explains that such treatments were first advocated by the famous French physiologist Brown-Sequard in 1891, based upon the perceived rejuvenation properties of testicular extracts.[2]

The British medical profession was generally skeptical and non-receptive to the notion of organotherapy. The *British Medical Journal* denounced Brown-Sequard's theories as an 'unscientific application to medicine'.[3] One factor which helped to change their minds was the discovery of the cure of myxoedema by a thyroid extract injection in 1891 by George Murray.[4]

Murray performed this work under the guidance of Sir Victor Horsley, a distinguished professor of surgery and pathology at the University of London[5] who had earlier concluded that myxoedema and cretinism were due to thyroid dysfunction.[6] His findings signified that myxoedema was caused by a deficiency of a thyroid secretion and thus a 'rational treatment' should be to treat the deficiency. This was the first generally accepted success in organotherapy. Together with the similar theories proposed by Brown-Sequard, this stirred up increasing interest among British physicians.[7]

Borell agrees that Murray's discovery was very significant to the history of endocrinology and organotherapy and therefore one would expect that the history of the thyroid would have been well documented and researched, however this is not the case. Although many historians have written about other aspects of endocrinology, notably reproductive endocrinology,[8] diabetes,[9] and internal secretions generally,[10,11] the literature regarding the thyroid is limited and where it is present, mostly outlines the major developments and experiments leading to our current understanding of the thyroid, giving a Whig-historian's account, an example being *The History of Endocrinology* by Victor Medvei.[12]

A quick search of the *Lancet* between 1895 and 1925 will interestingly reveal that thyroid organotherapy was used very extensively and not confined to states of thyroid deficiency, in contrast to today when hypothyroidism is the only indication for thyroxine. However we do not know why this was the case, and Borell doesn't explain it. This paper investigates further the understanding and the use of thyroid as a treatment between 1890 and 1925 in Britain.

Borell's research in reproductive endocrinology, stressed the opposing views of clinicians and physiologists who had 'their own problems and theoretical concerns',[13] with clinicians aiming to treat patients and physiologists to understand mechanisms and identify chemical properties.

Parallels can be drawn to works of historians such as Lawrence who also identified this 'rivalry' between medical science and clinical practice.[14] This study explores whether these divisions were also evident within the history of thyroid organotherapy and what their implications were. To explore the understanding and views of the thyroid in the medical community, consisting notably of physiologists and clinicians, four different bodies of sources by different authors were used.

By Physiologists:

1. Physiology textbooks
2. Journal of physiology

By Clinicians:

3. Organotherapy books
4. The *Lancet*

This account focuses primarily upon clinicians, since they were involved in the use of thyroid organotherapy; the understanding and views of physiologists are discussed mainly to explore the relationship between their developing knowledge of the gland's function and its clinical applications.

Physiology textbooks: exploring thyroid physiology understanding between 1885-1930

To look at how the understanding of thyroid gland function changed over time, the main developments within a physiology textbook series published between 1885-1930 are considered. The author, William Howell, was professor of physiology at Johns Hopkins University, Baltimore, and had a special interest in Endocrinology.[15] Many editions were published, allowing a good comparison of how understanding changed over time; furthermore this also suggests that the book was popular. Although this series is American, it was originally used at the University of Edinburgh, as evident from its library stamps, thus showing that it was used in Britain, and represented what was taught to doctors at the time in mainstream medical education.

In **1885** there was limited detail on the thyroid structure, and its 'chemical composition had not been much investigated', perhaps due to lack of interest. Its function was 'quite unknown', and was speculated to regulate blood supply to the brain by dilating its vessels. Howell describes an association between thyroid

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enlargement and palpitations due to nerve stimulation and he also associates a goitre with idiocy and cretinism. He stated that not much was known at the time; indeed this entry in 1885 was the shortest of all the editions.[16]

In **1896**, after Brown-Sequard's discovery there was a large section on internal secretions; however Howell admitted that knowledge of internal secretions was at a 'formative stage' and that 'speculations are numerous'.[17] In contrast to 1885, two theories were proposed regarding thyroid function. First was the removal of toxic substances derived from metabolism: therefore thyroid insufficiency would produce symptoms of auto-toxication. The second theory was that the thyroid secretes an internal secretion into the circulation of which the composition was 'incompletely known'. This secretion was important for the metabolism of various organs, especially the central nervous system, thereby accounting for neurological symptoms in its deficiency (e.g. tremors, convulsions). Furthermore this secretion could directly antagonise toxic substances and enhance their degradation.[18,19] In the opinion of Howell these two views of the function of the thyroid were equally accepted. Howell described the similar features of myxoedema in man and thyroidectomised animals, and subsequently advocated thyroid use in myxoedema, cretinism and goitre, without however referencing any authors specifically.[20]

Little was revised until **1911** when Howell suggested that the thyroid was important in 'general nutrition' (placing a lesser emphasis on the nervous system), and that it could also be used in supportive medicine, not just treating a deficiency specifically. Howell drew upon the observation that human thyroidectomies and 'thyroid atrophy results in arrested growth, deficient mental development, loss of hair...', which he interpreted as malnutrition.[21] Howell stated that the thyroid produces a 'specific hormone' that acts as a chemical stimulus to other tissues, resulting in nervous excitation and increased metabolism.[22] Note that this was the first issue that didn't mention thyroid's anti-toxic effects as this will be significant later.

In **1919,** the thyroid was perceived as important in general nutrition to the body, and its effects on the nervous system were omitted. Howell noted that thyroid was widely used in obesity by 'augmenting metabolism in other tissues'.[23] However, he explained that its influence on the metabolic processes were mostly unknown and that if used excessively it might cause pathological effects, thus seeming to be against this indication. More information was included about the composition of the thyroid extract, and that its activity correlated with its iodine content.[24]

In **1930,** Howell no longer stressed thyroid's importance to general nutrition but rather its importance in metabolism, which was decreased in hypothyroidism. There was greater information about the composition of the thyroid extract, including its molecular structure and its regulation of secretion.[25]

Overall there was a gradual development of understanding of the thyroid from the early stages to a view in 1930 similar to today's. In particular, note that in 1896 thyroid was described as possessing anti-toxic properties, though this was subsequently omitted in 1911. In 1911 thyroid was described as important for nutrition, but this was omitted in 1930.

Howell only advocated the uses and benefits of thyroid in myxoedema, cretinism and goitre, which is different from organotherapy books as we shall see. Although there was some clinical evidence, Howell referenced primarily experimental evidence, perhaps because he was a physiologist. His references were from journals from various countries, and included the *Journal of Physiology,* thus suggesting that his deductions were representative of the global view of the thyroid. This is in contrast to organotherapy books, which, as shown below, were based more upon theory and clinical evidence. As reviewing the textbook can only document the state of knowledge at specific years, it may not represent the actual gradual change in opinion. Consequently, this analysis was supplemented with an examination of the *Journal of Physiology*.

Journal of Physiology: exploring physiology research 1890-1925

The *Journal of Physiology* provides an overview of thyroid physiology research and insights into the aims and interests of physiologists. It was the major physiology journal in Britain at the time, and the majority of papers were written by physiologists from various universities and laboratories across Britain, thus perhaps reflecting more accurately the views of British physiology than Howell's textbook. However, my findings suggest a lack of interest in the subject. The first mention of the thyroid was in 1894, which was 4 years after Murray's report of the myxoedema cure with thyroid extract; moreover between 1895 and 1925 there were only 7 papers published regarding the thyroid.

The first thyroid experiments dealt with identifying the properties and actions of the thyroid extract, but also made some references to its relevance to the clinic. For example in the first publication in 1894, sheep's thyroid was used, which was the same as that used by Murray. This paper attempted to document thyroid's chemical composition and properties, and used animal testing to see if it was safe to be used in man (e.g. if it caused intravascular coagulation). The authors did so via a series of biochemical reactions and, in some cases such as with the intravascular coagulation, used animal experiments.[26] The next two papers were similar, further investigating the thyroid extract composition and physical properties (e.g. deducing its heat stability).[27,28]

Around 1900, a greater emphasis on animal experiments was seen, with many investigating the physiological effects of excess thyroid administration (e.g. on blood pressure and other organ systems), as well as looking at the effects of thyroidectomies on the animals and documenting the general effects. In many experiments, up to 8 animal species were used, perhaps to increase the reliability of the data.[29,30]

One report found that the animals were 'more prone to affections such as conjunctivitis, skin diseases and

catarrh of various kinds, indicating a lowering of general health due to the absence of the specific function of the thyroid', which was similar to Howell's 1911 textbook.[31]

Between 1906 and 1924 there were no articles regarding the thyroid, perhaps reflecting the lack of interest or of lack of ideas. Perhaps the 1914-18 War hindered thyroid research, as it was of no use in wartime. Only in 1925, 4 years after the discovery of insulin by Banting and Best, were there two animal studies, investigating the effect of the thyroid on insulin and on sugar metabolism.[32,33]

Like Howell, physiologists referenced mainly other European physiology journals, with only a few clinical journals. Although there were some minor differences in emphasis (e.g. the journal provided more information about physical properties) both sources shared similar themes and material. For example, Howell referred to many physiological animal experiments in explaining thyroid function. Although some of these experiments were directly clinically relevant, the majority of the work was not directly applicable, such as identifying the physical properties. However such information might be useful in the manufacture of thyroid medication.

Organotherapy textbooks: exploring the promotion and understanding of organotherapy

Organotherapy was a relatively newer facet of therapy, the first textbook available from the Wellcome library being published in 1905, almost 16 years after Brown-Sequard advocated testicular extract therapy. Perhaps this reflects the time needed to build up a substantial 'bank' of knowledge before book publications.

Organotherapy books were primarily written by British hospital clinicians, not physiologists, with the purpose of advising clinicians, particularly in general practice, on the indications for prescribing glandular extracts. Thus one can gain an insight into the clinicians' understanding of the thyroid, and their rationale for prescription. It is important to note that holders of hospital posts at the time were the elite of the profession, who worked without pay at the hospitals with the aim of attracting wealthy private patients from whom they derived their income. Thyroid therapy was expensive[34] and it's likely that organotherapy was aimed at the wealthy. It may be natural that hospital practitioners would be advocates of organotherapy, as discussed later. As shown above, while physiology textbooks promoted thyroid extract for the treatment of thyroid insufficiency only (notably myxoedema, cretinism and goitre), organotherapy books also recommended it for a variety of conditions.

In five organotherapy books published between 1905 and 1935, the indications, rationale and viewpoints on thyroid prescription were similar and changed little over time. I therefore considered organotherapy textbooks in 'one period'. Their similarities suggested that they are a reliable representation of British organotherapy in that period.

In most books, a section on thyroid physiology was included. Like Howell, this section referenced physiology journals quoting many animal studies. *Organotherapy* by Dr Batty Shaw (1905) had a physiology section based on Schafer's physiology textbooks,[35] and its content was similar to Howell's. It was clear from reviewing different editions of Howell's books that the physiologist's understanding of the thyroid developed much between 1885 and 1930; in the organotherapy books, the physiology section lagged behind, and a greater dissociation in the views of physiology was evident between the two texts, especially towards 1930. Perhaps this was influenced by the lack of British physiology papers between 1906 and 1924. I think it more likely that the authors either didn't have an up to date understanding of thyroid physiology or that they used physiological evidence that justified the prescription of thyroid (even if it was outdated), see below. For example, in Howell's 1911 edition the notion of the thyroid's detoxication properties was omitted but was continued in organotherapy books till the 1930s. Similarly the notion of nutrition was mentioned in 1935 even though it was omitted in 1930 by Howell.

In all the books, the first indications for thyroid prescription were those which Howell traditionally associated with hypothyroidism, notably myxoedema, cretinism and goitre, which are all diagnosed clinically. By 1905 it was stated that 'such treatment with thyroid preparations is based upon very thorough experimental and clinical investigations, which show that the defects produced by the absence of the thyroid gland may be remedied by the use of these preparations', so this indication was well understood.[36]

However thyroid was also prescribed for a diverse variety of other disorders that Shaw described as mostly based upon clinical reports and experience alone 'without clear experimental proof' of its relationship with the thyroid.[37] In 1905, 32 diverse indications were listed individually though subsequently its indications seemed to widen. In 1914 in *Practical Hormone Therapy* by Dr Henry Harrower, perhaps because of the overwhelming number of indications, they started to be listed as general specialties of diseases, such as immunity and resistance disorders, dermatology, gynaecology and nervous diseases.[38]

For example, Harrower advocated thyroid use in gynaecology: 'the stimulating action of the thyroid on the ovaries has been used to good advantage in the treatment of ovarian insufficiency with its various manifestations – e.g. infantilism, amenorrhoea, scanty menstruation, sterility ... It is not possible to explain the broad influence of thyroid medication upon this class of disease: it is far too complex'. This also illustrated the clinician's priority of treatment over a thorough understanding of its mechanisms.

Dr Ivo Cobb in 1922 published *Aids to Organotherapy*, where his indications for thyroid prescription were even broader. Based upon the recommendations of the distinguished endocrinology professor, Sajous,[39] Cobb divided thyroid's indications into four:[40]

1. Diseases due to slow destruction of toxic wastes (e.g. epilepsy and obesity)

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2. Diseases due to lowered nutrition of all tissues
3. In all cases where the repair processes or absorption are deficient
4. In infectious diseases.

These four categories cover a very broad range of diseases with little resemblance to thyroid deficiency. In 1924 Dr Carnrick published *Organotherapy in General Practice* and advocated thyroid, again based on Sajous's recommendations, resulting in an identical list of indications. Dr Cobb was a neurologist in London,[41] whereas Dr Carnrick was a physician from America,[42] thus suggesting that this diverse prescription was practised widely. Furthermore, Sajous' high status may reflect the respectability of organotherapy in medical practice and education. As the indications for thyroid are so vast, I have summarised a few major 'alternate' indications for thyroid that have continued throughout the 30 years.

Obesity was 'one of the most wide uses for thyroid',[43] suggesting that thyroid's alternate uses surpassed its traditional uses advocated by Howell. The original rationale was that obesity was a feature of myxoedema, thus it was believed that obese patients were thyroid deficient. This rationale gradually grew and Carnrick stated 'thyroid stimulates all metabolism and the oxidation of fat takes place as part of this general effect'.[44] Obesity's link to the endocrine system was described by Cobb: 'obesity occurs at the menopause or after oophorectomy',[45] thus justifying thyroid treatment.

Thyroid was indicated for '*Toxaemias*', the accumulation of toxic wastes. This encompassed a range of diseases, from asthma to epilepsy to skin conditions. Its rationale was the old notion of the detoxication properties of the thyroid,[46] based upon clinical evidence and deductions. For example, Cobb said that 'in many cases of toxaemia a swelling of the thyroid can be seen' suggesting thyroid deficiency; furthermore 'in hypothyroidism the presence of constipation would assist in the retention and putrefaction of intestinal contents, with resulting toxaemia'.[47]

Skin disease was another common indication, based upon the observation of skin changes in hypothyroid patients. Many clinicians reported benefits in various dermatological conditions such as eczema, psoriasis and alopecia.[48] Since 1893 when it was first described, there had been increasing rationales for its use, besides the accumulation of toxins, 'increased nutrition of the skin', and increasing sweating so excretion of waste products was also proposed.[49]

Chronic benign hypothyroidism or *sub-myxoedema* was another indication, first described by Hertoghe, a Belgian clinician in 1899.[50] Sub-myxoedema encompassed some but not all features of myxoedema, and to a lesser degree, such as grayness and loss of hair, dry skin, lack of energy, headaches, and constipation, which are all very general symptoms.[51] The diagnosis of myxoedema, sub-myxoedema and other diseases in the early 20th century was mostly clinical and it was not until 1949, when the urinary iodine excretion test was developed, that there was an objective biochemical method to diagnose thyroid disease.[52] With such vague definitions of sub-myxoedema it is understandable that clinicians could believe that their patient was thyroid deficient. Even Shaw explained 'one great difficulty is the diagnosis of thyroidal insufficiency'.[53]

In 1935, Dr Walker, a hospital clinician from Sunderland published a book[54] reviewing the numerous indications for organotherapy. He explained that 'thyroid is indicated in any condition in which there is depressed metabolism, and hence its range of utility extends from anorexia nervosa to ulcers of the leg',[55] thus illustrating that even by 1935, thyroid's indications still showed little signs of narrowing.

The Lancet: exploring the clinician's practice and their perception of thyroid therapy.[56]

By exploring the *Lancet* one can gain a further understanding of the actual practice of organotherapy and the clinician's attitudes to it. It also allows a comparison between the two sources and the many similarities between the two sources suggest that they provide a reliable reflection of the understanding of the thyroid and the practices of clinicians.

Between 1895 and 1925, the *Lancet* published 109 articles about the thyroid compared with 7 in the *Journal of Physiology,* thus suggesting greater interest among the clinicians or perhaps that there were more clinicians than physiologists. Articles on the physiology of the thyroid were all published relatively early, before 1900. The majority of the thyroid articles were case reports of treatment of thyroid diseases and the use of thyroid extracts.

Since Murray's report on the successful treatment of myxoedema with thyroid extract there were many case reports describing similar treatments of myxoedema, goitre and cretinism, acknowledging their success. Many outlined the dosage and the thyroid preparation, as well as the clinical descriptions of the patients, with the aim of guiding physicians and refining treatment, thereby improving patient care in future cases. For example, earlier cases of myxoedema were treated with grafting and injections, but this was discontinued following successful cases of oral ingestion, which first occurred in 1893.[57]

Interestingly the majority of case reports were of 'alternate uses' of the thyroid as described in the organotherapy books outlined previously. Perhaps this was because myxoedema, cretinism and goitre were all well understood at an early stage, and because the *Lancet* published only what clinicians wanted to read. Most case reports documented only a single patient. The range of conditions that thyroid was used for, was as wide as those reported in the organotherapy textbooks. In many cases, thyroid was used either supportively or as a last resort, following failure of traditional therapy. Although in most cases, thyroid treatment resulted in a 'miracle cure', not all case-reports reported success, and not all clinicians agreed with the efficacy of thyroid treatment. For example, based on the treatment of several patients with recurrent breast cancer, Dr Ernest Herman submitted evidence in 1899 showing that 'the greatest benefit

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results from combination of oophorectomy with thyroid extract than from either of them separately'.[58] A week later another physician published an article providing conflicting evidence showing that 'oophorectomy is by far the most important factor in the treatment and that it may be the only one'.[59]

The rationale and logic for prescribing thyroid differed considerably between clinicians: some used it because a previous clinician had used it with success, but in many the reasoning was similar to that detailed in organotherapy books, while in others no explanation was given. There were also clinicians who made their own deductions and associations.

For example, in 1894, a clinician noticed 'mental improvement and frequent recovery in patients with long standing insanity after attacks of inflammation generally' and thus deduced that fever was useful in the treatment for insanity. He thought that the thyroid would be an effective way of inducing fever, used it on patients and reported a beneficial effect.[60]

There were more reports during the earlier years of organotherapy (especially between 1895 and 1905) with a decreasing frequency towards the 1930s. After 1905 and the first publication of organotherapy textbooks, there were gradually fewer articles in the *Lancet*.

Discussion

One of the most obvious themes of this research was the diverse indications for thyroid prescription advocated by organotherapy books and the *Lancet*, of which many did not directly relate to the thyroid. The range of indications widened from the early years of organotherapy from Murray's discovery onwards, and even by 1935 there were few signs of it narrowing. In this discussion, why clinicians used thyroid the way they did, the context in which thyroid was used, and the differing aims and viewpoints of clinicians in contrast with physiologists addresses why thyroid was used despite the increasing discrepancy between physiology and organotherapy.

Thyroid therapy was expensive. Burroughs Wellcome's 'Tabloids' cost 2 shillings per 100 'tabloids',[61] equivalent to approximately £50 in today's terms.[62] The treatment cost also depended on the indication and dosage, varying from 1 tabloid a day for a cretin child to up to 75 tabloids a day in adult psoriasis.[63] Thus its use may have been restricted to the upper classes. The *Lancet* reflects this and many organotherapy case-reports were written by clinicians from private practices in Harley Street.[64] Private patients were likely to be the few who could afford and know about the benefits of the expensive organotherapy. In a 'consumerist' age, healthcare may be viewed as a commodity, whereby the more you buy, the more health benefits you receive. Thyroid use was further encouraged by Burroughs Wellcome advertising its broad benefits to both the public and clinicians, and also thyroid's availability 'over the counter'.[65] Patients may also have been aware of benefits of the many other popular glandular techniques, such as Eugen Steinach's rejuvenating vasectomy operations, and this might promote optimism in the beneficial properties of other glands such as the thyroid.[66] Clinicians could therefore be pressured to prescribe thyroid therapies to maintain a favourable doctor-patient relationship. This is similar to the views of Lawrence, who suggested that the attitude of physicians to new technologies depended on the views of private patients; perhaps this might also apply for novel therapies.[67]

Perhaps many clinicians were prescribing thyroid as clinical research. For example, a case-report from Germany reported that a case of diabetes was successfully treated with thyroid.[68] This was against theory at the time and therefore was 'impossible to justify' as hyperthyroidism was known to induce glycosuria.[69] Moreover, as discussed previously thyroid was often prescribed supportively or as a last resort, leading to the suspicion that the thyroid was prescribed for an even broader range of indications than has been documented.

Another major theme is the differing views and understanding between clinicians and physiologists on the uses of thyroid (apart from its uses for myxoedema, cretinism and goitre where there is general agreement), as demonstrated by the increasing discrepancy between physiology and organotherapy. Why did thyroid use in clinical practice continue to expand despite this?

The reason for this is multifactorial. Clinicians and physiologists have differing aims: while physiologists are concerned with understanding mechanisms and identifying properties (at the time physiology and biochemistry were very much related), the clinician's role is to treat patients. Therefore if thyroid therapy is effective, then a complete understanding, or even a relationship between thyroid and the condition, is unnecessary. Harrower summed this up nicely, 'clinical medicine merely permits us to suppose a thyroid origin' for such a disease, 'it cannot be proved absolutely' therefore although the thyroid extract 'may be quite unscientific, it is none the less resultful, therefore should be prescribed.'[70]

Clinicians and physiologists required differing proofs to accept the efficacy of a treatment: while physiologists demanded objective and measurable data, clinicians required subjective clinical observations. Even though it could not be proved that thyroid possessed anti-toxic properties in the laboratory, if such properties could be demonstrated in the clinic in a few case-reports (even if it is in the light of other conflicting reports), then it was convincing enough for the clinicians. This was clinical research and practice in the early 20th century.

Most treatments in the early 20th century addressed symptoms and were supportive, improving general health and constitution, in contrast to 'magic bullets' of which only diphtheria serum and Salvarsan existed. Therefore although thyroid was specific for myxoedema, it's understandable that thyroid was also viewed as a supportive treatment,[71] indeed Howell supported this until 1930.[72]

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Clinicians regarded themselves as elite members of the scientific community and it was difficult for physiologists to convince them that laboratory experiments should be the 'gold standard'. Indeed in many cases where the thyroid was prescribed, however superficial, it was still based upon a logical clinical deduction (e.g. the previous case of using thyroid to induce fever in patients suffering from insanity). Harrower explained that 'when thyroid therapy controls these diverse symptoms, one must admit that hypothyroidism in a certain degree was concerned in their production', illustrating another view of clinical reasoning.[73]

In contrast to physiologists who would develop physiological evidence and then apply it to the clinic, it seems clinicians would find effects in the clinic and then apply physiological theories to justify them (even if they were outdated), including only those which suited their observations, and omitting those that didn't. For example Cobb in 1924 explained that 'the increased oxidations and the destruction of toxic protein metabolites as a result of thyroid seems attractive in explaining its use' for asthma.[74]

The differing perspectives of clinicians and physiologists support Borrell's earlier findings, and also lend additional evidence to Lawrence's view that early 20th century clinicians viewed 'art as practice, and science as theory'.[75] Although 'a physician should have scientific knowledge, it was useful and informative ... but above all he practised a clinical art grounded ultimately in his own experience'.[76] Though clinicians thought physiology was important, they saw it as secondary to clinical practice and experience. Lawrence explained that 'Once they got to the bedside, students were told that they would find their scientific book-learning gave very little preparation for the clinical art'.[77] Physiologists themselves saw matters differently. As their most outspoken proponent, Claude Bernard described hospitals as 'the entrance to scientific medicine and the first field of observation; but the true sanctuary of medical science is a laboratory'. Bernard believed that laboratories and physiology were the foundation for all medicine.[78] As elite clinicians and physiologists both perceived their field as the authoritative power, it would be difficult for them to convince each other otherwise. However it was the clinicians who had access to the patients, thus they practised what they believed in.

In conclusion, from 1890 to 1935, thyroid use and its indications became increasingly diverse and its indications increasingly vague despite a growing discrepancy between physiology and organotherapy. I believe this was due to the social contexts in which thyroid was used and the differing objectives and viewpoints of physiologists and clinicians.

Since today the only indication for thyroid is hypothyroidism, its indications must have narrowed at some point. Perhaps this happened around the time of the first randomised control trial in 1946,[79] or after the development of objective biochemical tests in 1949.[80] Based on the above evidence one can only speculate. Although I have utilised four bodies of sources reflecting reliably the state of physiology and organotherapy at different time periods, this is only a fraction of the primary sources available. Consulting additional and a wider variety of other sources, such as other prestigious journals and old clinician's notes for prescription of thyroid might give the research a firmer conclusion.

In retrospect, although '*Organotherapy, British Physiology, and Discovery of Internal Secretions*' by Borell[81] gave an excellent account of the origins of thyroid organotherapy and the eminent figures involved, it omits the 'shotgun therapy' added by this research.

Acknowledgements

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Author's address: christopher.tam@imperial.ac.uk

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The Pharmaceutical Museum in Sibiu, Romania

Peter Houghton

Professor of Pharmacognosy, Department of Pharmacy, King's College London

Sibiu was the most prominent of the 'Saxon towns' in Transylvania, Romania. These towns were dominated by descendants of Germans mercenaries who were originally brought several centuries ago to help fight against the Turks and other invaders. They quickly became the dominant force in crafts and commerce and retained their own language, form of Christianity and many other aspects of culture. Until Transylvania became part of Romania in 1918, Sibiu was known by its German name Hermannstadt, and the name is still included today on many signs and tourist material.

We spent a fascinating holiday in Romania in July 2006 and one of the places that the guidebooks recommended as a 'must-see' was Sibiu. Sibiu is the European Capital of Culture for 2007 and a lot of restoration work is taking place, especially around the central squares. These look very like a town in Germany with beautiful coloured houses with steep, tiled roofs and some imposing churches and old towers.

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We had noticed that the guidebook talked about a pharmaceutical museum in one of the beautiful old squares in the centre of Sibiu. At first we could not find it sinceit had no indication from outside that it was there, being part of a row of old shops around the side of one of the squares. The door was even chained when we tried to enter but the curator came and welcomed us. Unfortunately, unlike many of the people we mat on our holiday, she could not speak Englis, but information sheets in English were available.

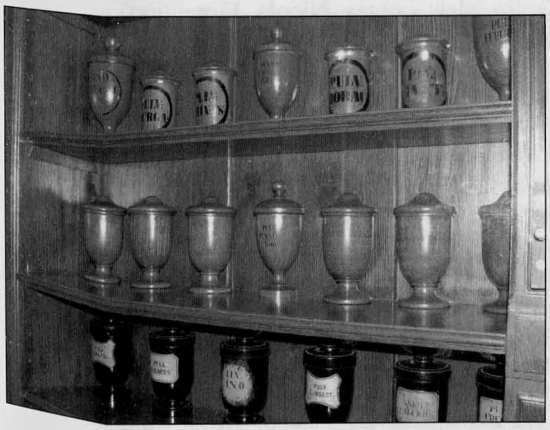
The front part of the museum was the 'shop' and was lined with wooden shelves and runs of drawers familiar to British pharmacists of two generations ago. They were not all the original fittings but had been brought from pharmacies in Austria and other central European places. Drug jars of porcelain and glass as well as treen containers were well-preserved and displayed and the names on the labels evoked memories of classical pharmacognosy.

The rooms behind were most fascinating as they consisted of the dispensary and laboratory. Many items of interest caught my eye such as scales with stone weights, a rack of wooden pestles of various sizes and a collection of pharmacopoeias of the AustroHungarian empire dating from the early nineteenth century.

The display of most interest, however, was that about Samuel Hahnemann, the founder of modern homeopathy. He had lived for about two years in Sibiu as one of the curators of the art collection set up by Count Brukenthal in the late eighteenth and early nineteenth century. This collection became the first one in Europe to be opened to the public and is well worth a visit, being situated in the Count's old mansion in a square neighbouring that containing the museum. As mentioned by Steven Kayne in his recent article on Hahnemann (Pharmaceutical Historian 36(2) Supplement pp23-26), it was during this time that he became familiar with the symptoms of malaria and the effects of quinine which led him to put forward his theories and test them. Several homeopathic medicine cases were displayed as were pictures, books and documents connected with homeopathy and Hahnemann's life.

One hopes that the museum, along with many other fine historical and natural aspects of Romania, will benefit from Sibiu being the focus of European culture next year, particularly in making it easier to find and explain itself by having English guides and notices.

Author's address: peter.houghton@kcl.ac.uk



Collection of treen containers in Sibiu pharmacy museum

The Countess's Ointment

Patrizia Catellani and Renzo Console

Introduction

Unguentum Comitissae, called Countess's Ointment in English, was a medieval astringent remedy. Its virtues were highly regarded, especially for solving gynaecological problems such as excessive menstrual flux or impending miscarriage. The invention of this remedy has been attributed without exception to Guglielmo da Varignana who described it in 1319. It remained in use until the end of the 18th century.

Unlike the formulae of other famous ancient medicines, the composition and preparation of this ointment were repeated with very few changes for centuries in pharmacopoeias and treatises printed in Italy and other parts of Europe from the late 15th century onwards.

However during the period when *Unguentum Comitissae* was still in use some authors preferred to introduce other similar ointments for the same afflictions, in order to reduce the difficulty of preparation and to overcome the unavailability of some of the ingredients. Such variants were sometimes called 'astringent ointment' or '*unguentum stypticum*'.

The Origin of the Ointment

This Ointment appeared at the beginning of the 14th century. Guglielmo da Varignana (1270-1339) claimed to have created it and was the first to describe it in his manuscript *Secreta Sublimia ad Varios Curandos Morbos* (1319). However the first appearance of the Countess's Ointment was not in Guglielmo's printed works, which were only published from 1519.[1] The earliest known printed book containing the remedy is *Tractatus de Matricibus* of 1474[2] (later entitled *De Aegritudinibus Matricis*) by Antonio Guainerio, a physician from Pavia who died in 1445 (before his text was printed). Guainerio did not attribute the Ointment to anybody in particular. However he wrote that 'in Italy they call it *unguentum comitissae*'.

In the 15th and 16th century the authors unanimously attributed the Ointment to Varignana and usually called it '*Unguentum Comitissae Gulielmi de Varignana*'. Manlio del Bosco, who is regarded as the first pharmacist who ever wrote a

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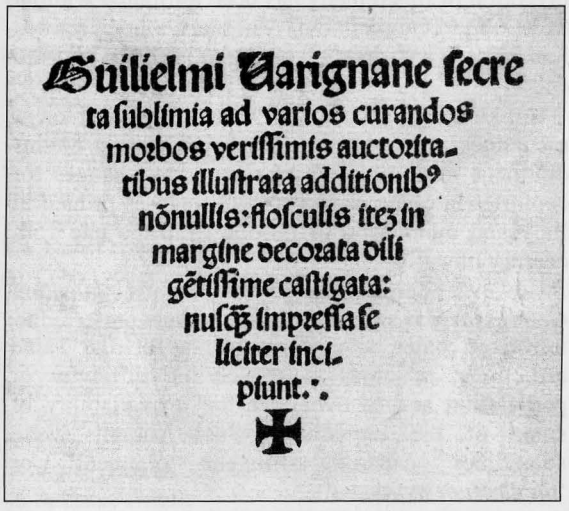
pharmacopoeia (1494), had this to say about the paternity of the Ointment:[3]

> Nicolo Fiorentino [...] was not its first inventor. Antonio Guainerio [...] writes the same. You must know that many modern physicians, and Apothecaries, used to look for the aforesaid ointment in Guglielmo Lombardo, because they did not know Gulielmus de Varignana.[4]

The Inventor: Guglielmo da Varignana

Guglielmo da Varignana[5] is the only author who has been credited with the invention of *Unguentum Comitissae* and his discovery has never been contested. He was born in about 1270 at Varignana near Bologna and died in 1339 or slightly earlier. He was the son of another distinguished physician, Bartolomeo, a specialist of forensic medicine and an author of medical treatises.[6] He was his father's pupil and graduated in medicine at Bologna, where he practised his art with success and became consul of the city in 1304. However both of them had to relocate several times for political reasons.[7]


Guilielmi Varignane fecre
ta ſublimia ad varios curandos
morbos veriſſimis auctorita-
tibus illuſtrata additionib⁹
nõnullis: floſculis itez in
margine decorata dili
gẽtiſſime caſtigata:
nuſq̃ impreſſa ſe
liciter inci-
piunt.·.

Title-page of the 1520 edition of Guglielmo da Varignana's *Secreta Sublimia ad Varios Curandos Morbos* (1319), containing the original formula of *Unguentum Comitissae*. Wellcome Library, London.

In 1318-1319 Guglielmo was in Zadar (or Zara), which at that time belonged to the Republic of Venice. He was protected by Meladino, governor of Croatia and Bosnia, who encouraged him to write his medical work, *Secreta Sublimia ad Varios Curandos Morbos*, completed at Zara in 1319.[8] Meladino also obtained for Guglielmo the texts of the great ancient doctors which he needed as references for *Secreta Sublimia*. In fact Guglielmo explains that he used works by Galen, Dioscorides, Serapion, Mesue, Rhazes, Hamech and Maimonides. *Secreta Sublimia* was first distributed in manuscript form and later printed at least seven times in the 16th century, starting in 1519.[9]

In all printed editions (divided into discourses, treatises and chapters) the Countess's Ointment is included in Discourse I (*De Omnibus Egritudinibus*), Treatise XVI (*De Dispositionibus Matricis*) and Chapter IV (*De Retentione Menstruorum*).

Historical Hypotheses about the Countess

There is very little information available that might allow us to identify the particular countess for whom Guglielmo da Varignana first prepared his Ointment. In all the editions of his work we can find no more than the following words about the countess:

> Indeed I have wonderful experience in reducing menstrual flux with this ointment that I have discovered with particular diligence for a countess our godmother [*commater*]. In fact she had already started having a miscarriage, and blood and water had come out in great quantity; however she anointed herself just once with the ointment and was healed; and therefore I have called it the countess's ointment; and later on many and many occasions I have cured with that and if you anoint the loins up to the back, you stop the haemorrhoids.

The late Latin word *commater* is not totally clear in this context. It could mean that the Countess was the godmother of (at least) one of Guglielmo's daughters, or that he was the godfather of any of the Countess's children, or that both of them were grandparents of someone else's children. In theory *commater* could also mean that the Countess was Guglielmo's godmother; but this seems unlikely, because she was still of child-bearing age when Guglielmo was an accomplished physician.[10]

Other authors who have explained the origin of the Ointment have given some slight additional details about the Countess. Manlio del Bosco,[11] referring to a manuscript copy of Varignana's *Secreta Sublimia*, quotes his words differently from the text that we have quoted above from the printed editions:

> I [...] have wonderful experience with this ointment found by myself, for the Countess of Vadra, who being pregnant was pressed by the crowd in the solemnities of Saint Grisogonus, so that she was about to have a miscarriage, [...] & with this used once she was healed, and saved the birth: therefore I have called it the Countess's ointment.

Manlio also quotes Nicola Fiorentino who had mentioned a duchess instead of a countess:

> [...] Nicolo Fiorentino [...] shows a useful ointment used by the Duchess of Austria; some call it the Countess's ointment, and it is the same.

Manlio's quotation of Guglielmo's words (about a countess of Vadra) and of those of Nicola Fiorentino (who mentions a duchess of Austria) was earlier than the publication of Guglielmo's printed works (where Vadra and Austria are not mentioned). Could it mean that one of Guglielmo's manuscripts was interpreted erroneously by Manlio, and that it should have been read as '*Zadra*' (now Zadar or Zara) instead of '*Vadra*'?

We know that Guglielmo was writing his work while he was at Zara, and in his printed dedication

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to Meladino we read that the book was prepared '*in loco sancti Grisogoni*', i.e. in the Benedictine monastery annexed to Saint Grisogonus's abbey. At the end of the text the work is presented as completed '*in veneranda civitate Januae*' (which would mean Genoa), but some manuscripts read (probably more correctly) '*Jadrae*', i.e. Zara.[12]

These references to Saint Grisogonus and to Zara may allow us to think that the noblewoman was indeed from Zara and that the episode of her impending miscarriage and cure happened during the solemnities of that Saint. Grisogonus (today called Crisogonus), a Roman, was martyred at Aquileia (today in north-east Italy) by Diocletian at the beginning of the 4th century AD and his anniversary is celebrated on 24th November. He is one of the patron Saints of Zara in Dalmatia, where he was and still is much revered.

It would be interesting to know where and when that particular celebration mentioned by Varignana (according to Manlio) actually took place. It must have been when Guglielmo was an adult, and therefore in the early 14th century. It may well have been a very special celebration, i.e. the one-thousandth anniversary of Saint Grisogonus's martyrdom (that occurred in about 1305).

As far as the Duchess of Austria (mentioned by Nicola Fiorentino) is concerned, the present authors wonder whether anybody has later described or quoted a 'Duchess of Austria's Ointment', but their search in many texts, catalogues and inventories has not been successful.

The Original Recipe: Ingredients and Preparation

The recipe of *Unguentum Comitissae* shown here is the one described by Guglielmo da Varignana in his *Secreta Sublimia*.[13] The recipes presented by all other authors come from this one and either are identical to this or have very few different ingredients.

Guglielmo presents the recipe by dividing the ingredients into four groups in accordance with the phases of the preparation [amounts omitted]:[14]

(a) *Cortices mediani castanearum, glandium & arborum glandium* (middle bark of chestnuts, acorns and oaks)*; myrtilli* (berries of myrtles)*; cauda cabalina* (horsetail)*; gallæ* (galls)*; cortices fabarum* (broad bean pods)*; ozimi vel arili uvarum* (grape stones)*; sorbelæ siccæ* (dried service fruits)*; nespilli immaturi* (unripe medlars)*; radices celidoniæ* (celandine roots)*; folia pruni silvestris* (leaves of sloe-tree) and *aqua plantaginis* (plantain water).

(b) *Cera* (wax)*; oleum myrtinum* (oil of myrtles).

(c) *Cortices castanearum, glandium & gallarum arboris* (bark of chestnuts, acorns and tree of galls)*; cinis ossium cruris bovis* (ashes of the bone of an ox leg)*; semina myrtilorum* (myrtle berries)*; azimi alias arili uvarum* (grape stones).

(d) *Trocisci de karabe* (troches of amber)*; oleum myrtinum* (oil of myrtles)*; oleum masticinum non lotum* (unwashed oil of mastich).

If we consult pharmaceutical botany texts of different periods it can be clearly seen that astringent properties were attributed to nearly all these ingredients.

Some of the authors who described the Countess's Ointment and had botanical expertise also added their own specific comments about some of the original ingredients. We would like to mention the following example.

Bernard Dessen van Cronenburg (1510-1574), a professor of medicine born in Amsterdam and educated at Bologna University, published in 1556 a treatise of nearly 1000 pages entitled *De Compositione Medicamentorum*.[15] It contains one of the most extensive discussions of the Countess's Ointment written in the 16th century. Dessen explained in detail four specific ingredients: *Cortices mediani castanearum*, *Sorbae siccae*, *Mespila immatura*, *Radices chelidoniae*. His arguments coincide only in part with earlier ones. For example, he gives a much wider botanical description of chestnuts and clarifies what 'middle bark' means precisely. He also says that some authors mistake '*mespila*' (medlars) for '*sorbae*' (services). '*Celidonia*' (celandine) is explained extensively. The names of each plant are given in Latin, High German, Low German, French and Italian!

The preparation of the Ointment described by Guglielmo and accurately followed by later authors was rather laborious and was performed in four stages:

1. Firstly the ingredients of group (a), taken in equal quantities, were coarsely chopped and 'cooked to perfection' in plantain water, and the whole was filtered.[16]

2. The wax (in a quantity *secundum artem*) was separately dissolved with oil of myrtles (b) and the resulting emulsion was washed nine times with the aforementioned solution containing the extracts of the ingredients in plantain water, replacing the solution each time.

3. Then the ingredients of group (c), in equal quantities, were very finely pulverised.

4. Two parts of this powder were mixed with one or one-half of a part of troches of karabe, wax and the oils of group (d) to obtain the ointment.

After explaining Varignana's preparation of the Ointment, Manlio del Bosco adds this comment stating that Varignana's method is the best:[17]

> This ointment is very much in use, in accordance with this description. Many moderns make it in a different way, but this is more worthy: because Guglielmo was its first inventor.

However some time later Johannes Zwelfer (*Pharmacopoeia Augustana Reformata*, Nuremberg, 1667) and Giuseppe Donzelli (*Teatro Farmaceutico Dogmatico e Spagirico*, Naples, 1675) criticised one important aspect of Varignana's preparation. They claimed that substances obtained by boiling the ingredients of group (a) were almost totally wasted as

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they were only used to wash the wax and oil of myrtles. In their view they should instead be pressed and filtered, and the liquid obtained should be slowly concentrated at moderate temperature and added to the oils and wax, and finally mixed with the powdered ingredients.

Use and Virtues of the Ointment

We have already seen the purposes for which Guglielmo da Varignana created the Countess's Ointment: to control women's menstrual flow and preserve pregnancy by preventing miscarriage. Various authors explained the benefits of using the *Unguentum Comitissae* in very similar terms.[18]

William Jackson, a regular contributor to the *Pharmaceutical Historian*, has kindly provided the present authors with two British references to the Countess's Ointment or *Unguentum Comitissae*. He has found the first one in William Salmon, *Pharmacopoeia Londinensis, or, the New London Dispensatory* (1678, London, Printed by Thomas Dawks, Book 5, Chapter 4, p. 760). The preparation is followed by this comment:

> It is an excellent binding and strengthening Oyntment, good to anoint Sprains, Luxations, Ruptures, weak Backs, and to stop the falling out of the Fundament: The Belly and Reins being anointed with it, it prevents Abortion, stops all sorts of Fluxes, the overflowing of the Terms, and the Whites, having all the virtues of Unguentum adstringens aforesaid.

William Salmon praised the Countess's Ointment in his *Pharmacopoeia Londinensis, Or, the New London Dispensatory* (1678). Wellcome Library, London.

The second reference is in Nicholas Culpeper, *Pharmacopoeia Londinensis; or the London Dispensatory* (1695, London, Printed for Awnsham and John Churchill, p. 230). Culpeper's comments are:

> It seems in my eyes a gallant binding Oyntment, composed neatly by a judicious Brain. The Belly and Reins being anointed with it, it stays Abortion or Miscarriage in Women though already begun. It strengthens week backs exceedingly, and stops the immoderate flowing of the Terms and Hemorrhoids, and falling out of the Fundament and Womb. Finally, for every occasion that requires binding. I would if I were eloquent commend it in the superlative degree.

Nicholas Culpeper praised the Countess's Ointment in his *Pharmacopoeia Londinensis; or the London Dispensatory* (1695). Wellcome Library, London.

The present authors have seen the accounts of the apothecary Camillo Rossi da Nuvolara (Novellara), kept at the Archivio di Stato in Modena. The accounts that he recorded in the years 1589 to 1591 for Horatio Sanesi's pharmacy located at Mantua contain unusual prescriptions for the Countess's Ointment. In fact, on several occasions the Ointment was dispensed jointly with Galen's *Unguentum Infrigidans* in equal proportions for the same person.

The *Unguentum Infrigidans*, prepared with water, oil and wax, did not have an astringent effect that could prevent miscarriage like the *Unguentum Comitissae*. It was usually employed to reduce the heat generated by fevers. The reason why that particular patient needed both ointments at the same time is not explicitly explained. In any case, such prescriptions show that the Countess's Ointment was in use at the end of the 16th century.

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Unguentum Comitissae as an Ingredient

In the history of pharmacy we have examples of compound preparations that could be added to the ingredients of complex medicines in order to strengthen their virtues. We have found a case where the Countess's Ointment is used as an ingredient. It is in a gynecological essay of the late 16th century entitled *Matrix and the Pain Thereof*, copied in full and presented by Barbara H. Traister.[19] The author is the British 'astrological' physician Simon Forman (1552-1611), who left the essay in manuscript form. The relevant part of the essay is this:

> A plaster to strengthen the backe of a woman that hath moch weknes in her back, and yt is approued often and yt draweth vp and houldeth vp the matrix & the Birth.
>
> RX vng. comitisse takamehat ana partes equales cinnamoni 1 dram gariophilli 2 scruples sumach 1 oz. pulveriz aut fiat in pltrum.
>
> The plaster that I mad for Jone Wolfe 1598, 23 Septemb to strengthe and comforte her weke backe and to stop the whites, caused of Mars in Libra, Moon sept a Venus in Libra. Saturn in Libra d here.
>
> | | |
> |---|---|
> | R_X vng. infrig gall | sanguinis drac 2 drams |
> | vng. comitiss cal an oz. | zinziber 2 drams |
> | carannae | caere 2 oz. |
> | sem sumacis | olibani 1 oz. |
> | acatia an oz. | masticis 1 dram |
> | hipoquistidos | |
>
> pouder them and melte the gums and make a plaster therof on lether. This is a wonderfull comfortable plaster, and yt is cold in 2 degres.

Similar Ointments

In 1544 the scholar **Georg Kraut** published his transcription of a medieval gynaecology manuscript at Strasbourg. He entitled it *Trotulae Curandarum Aegritudinum Muliebrium, Ante, In & Post Partum Liber Unicus.* During the same century other similar editions were produced, which have since been used by the majority of medieval medicine researchers.[20] An ointment recommended against the risk of miscarriage can be found in the chapter entitled *De Aborsu* or *Contra Aborsum*. The translation of this is shown here:[21]

> Against miscarriage [which is] accustomed to happen to certain women in the seventh or ninth month. Take oil, wax, powder of frankincense, and mastic, and mix them, and let the woman be anointed in front and in back two or three times a week. This very much strengthens the womb and the cotyledons.

This very simple ointment is particularly interesting in view of its specific purpose and because its ingredients are part of many versions of the future Countess's Ointment.

Various authors have proposed ointments created by themselves as alternatives to the Countess's Ointment. They have given them different names and have claimed that their own preparations are simpler than *Unguentum Comitissae* without lacking any of its virtues. Here are a few examples.

Bartolomeo Montagnana (circa 1380-1452), a physician and surgeon who taught practical medicine at Padua, proposed two chestnut bark ointments with properties similar to those of Varignana's *Unguentum Comitissae*. We find them in his *Antidotarium*,[22] written approximately a century after Varignana's *Secreta Sublimia*. However Montagnana did not explicitly mention his predecessor's Ointment and called both his formulae *Unguentum de corticibus castanearum*. The respective ingredients are these:

> *Oleum de mastice* (oil of mastich); *oleum mirtinum, citoniorum* (oil of myrtles, quince); *mastiche, acacia, sanguis draconis* (mastich, acacia, dragon's blood); *coralla rubra* (red coral); *karabe, terra sigillata* (amber or karabe, sealed earth); *cortices castanearum, scoria ferri preparata* (chestnut bark, prepared iron flakes); *bolus armenicus, balaustia, thuris* (Armenian bole, pomegranate flowers, frankincense); *resina* (resin); *cera* (wax).
>
> *Oleum mirtinum* (oil of myrtles); *oleum vulpinum* (fox oil); *oleum de mastice* (oil of mastich); *mastiche* (mastich); *sandaraca, sanguis dragonis, coralla rubra* (sandarac, dragon's blood, red coral); *karabe, terra sigillata, cortices interiores castanearum* (amber or karabe, sealed earth, inner chestnut bark); *scoria ferri in aceto* (iron flakes in vinegar); *cera* (wax).

Montagnana emphasises that these two ointments are different. The first one is recommended for 'excessive menstrual flow' and 'dysentery', and the other for the 'flux of the bowel'. Both contain various ingredients of the Countess's Ointment (but not all) and some others.

The noblewoman **Caterina Sforza** (1463-1509), Galeazzo Maria Sforza's daughter, wife of Giovanni de' Medici called 'il Popolano' and Giovanni dalle Bande Nere's mother, in spite of her active participation in political battles had an extraordinary interest in pharmaceutical preparations and cosmetics.

She collected a large number of recipes of different kinds, which were collected after her death by her son Giovanni and carefully transcribed in 1525 on his behalf by Lucantonio Cuppano with the title *Experimenti de la Ex.ma S.ra Caterina da Furlj.* Cuppano's manuscript was printed a long time later in 1894 by Pier Desiderio Pasolini.[23]

Among many recipes in the *Experimenti* there are a *Cerotum strictivum ad crepatos* and an *Emplastrum constrictivum ad crepatos*, which are external remedies to be spread on the skin, although they are not precisely called ointments (*'unguenta'*).

These two remedies are rather complex and contain many of the ingredients used in the orthodox Countess's Ointment. The *Cerotum* includes 14 of such ingredients:

> *Dragantum* (tragacanth), *gummi arabicum* (gum Arabic), *[...] bollus armenicus* (Armenian bole), *terra sigilata* (sealed earth), *sanguis draconum* (dragon's blood), *[...] myrtus* (myrtle), *olibanum* (olibanum), *balaustia* (pomegranate flowers), *gallae* (galls), *cortices granatarum* (pomegranate bark), *nuces ciprexi* (cypress cones), *[...] sumach* (sumach), *[...] cera nova* (new wax), *[...] oleum mertivi* (oil of myrtles).

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The *Emplastrum*, which is not very different, includes 18 of the Countess's Ointment ingredients:

> *Mastiche* (mastic), *[...] bolus armenicus* (Armenian bole), *sanguis draconis* (dragon's blood), *[...] terra sigilata* (sealed earth), *[...] ciparus* (sedge), *[...] ypoquasidi* (Cytinus Hypocistis), *gallarum cortices* (bark of galls), *thurris* (frankincense), *balaustia* (pomegranate flowers), *coppulae glandium* (acorn cups), *nuces ciprexi* (cypress cones), *dragantum* (tragacanth), *[...] olibanum* (olibanum), *gummi arabicum* (gum Arabic), *sumach* (sumach), *[...] succus plantaginis* (plantain juice), *lambrusche* (grapes), *grana granatorum* (pomegranate seeds).

Jean Fernel (1497-1558), an innovative French physician and scientist,[24] proposed an astringent ointment similar to *Unguentum Comitissae*.[25] The ingredients were:

> *Galla immatura, nuces cupressi, baccae myrti, balaustia, malicorium, cortices glandium, acacia, rhus, mastiche* (unripe galls, cypress cones, myrtle berries, pomegranate flowers, pomegranate bark, bark of acorns, acacia, sumach, mastich); *succus mespilorum et & sorborum immaturorum* (juice of unripe medlars and services); *oleum rosatum in aqua aluminosa lotum* (oil of roses washed in alum water); *cera alba* (white wax).

Fernel does not mention the Countess's Ointment directly, but his pupil and follower Guillaume Plancy makes this comment:

> This astringent ointment, very effective and easy to prepare, will take the place of the countess's or any other astringent ointment.

Moyse Charas (1619-1698), a distinguished French pharmaceutical chemist, naturalist and physician, mentioned the Countess's Ointment in his *Pharmacopée Royale* (1676), but did not fully approve of it, nor did he present the original formula. He wrote this:[26]

> Some descriptions of an Astringent Ointment can be found in some Authors, as well as of one called Ointment of the Countess, that is much appreciated in the practice. But if we closely examine all these descriptions, we will find things that very well deserve to be reformed, and it will be appropriate to give a better and more methodical [description].

Therefore Charas proposed his own version of the ointment, calling it *Unguentum Stipticum*. The ingredients were:

> *Oleum commune* (common oil); *myrtilli sicci contusi* (dried crushed myrtles); *alumen rupeum* (rock alum); *succus myrtillorum & sorborum immaturorum* (juice of unripe myrtles and services); *oleum fœcibus liberatum* (oil freed of sediment); *cera alba* (white wax); *nuces cupressi, myrtilli, balaustia, cortices granatorum & glandium, acini uvæ, ossum è crure bovis calcinatum, grana sumach, mastiche, acacia, alumen ustum, cortex medianus castanearum* (cypress cones, myrtles, pomegranate flowers, bark of pomegranate and acorns, grape seeds, calcined boned of an ox's shin, sumach seeds, mastich, acacia, burnt alum, middle bark of chestnuts).

This is Charas's conclusion:

> Those who are going to have this Ointment well prepared, will not need the Countess's Ointment, the preparation of which is very difficult, and which has inferior virtues.[27]

The famous pharmaceutical chemist **Nicolas Lémery** (1645-1715) included Varignana's Countess's Ointment in his *Pharmacopée Universelle* (1697), but also proposed a similar one with astringent virtues called, *Onguent Styptique* or *Unguentum Stypticum*.[28] Lémery does not attribute this ointment to an earlier author and therefore implicitly presents it as his own. However his recipe is nearly identical, word for word, to Charas's version of the *Unguentum Stipticum* that we have just seen, with only a slight difference in the sequence of the ingredients.[29]

Then Lémery, having also described the Countess's Ointment, adds a remark that echoes Charas's words, by saying that 'it differs little from the aforementioned Unguentum Stypticum, and when we have the one, it is useless to prepare the other'.

Differences between Ointments and Other External Remedies

In the old pharmaceutical texts the external remedies were classified under different names. We could have an *unguentum*, a *ceratum* or *cerotum*, an *emplastrum*, a *linimentum* or simply an *oleum*. These terms do not necessarily have precisely equivalent words in the current languages. In English we could have salves, ointments, liniments, pomades, creams, unguents, oils; but they do not necessarily mean the same as similar words found in the pharmaceutical texts.

Although the old authors substantially agreed on the characteristics of each kind of ointment, the differences were not absolute or rigid. So, to clarify the subject, we are going to mention the views expressed by authors who described the Countess's Ointment or other similar preparations.

Quirico degli Augusti, writing before the end of the 15th century, made a rather simple distinction. This is what he wrote in his *Lumen Apothecariorum* (1492):[30]

> An *unguentum* differs from an *emplastrum* because an *unguentum* is much softer, or liquid, or can be liquidised, but an *emplastrum* is solid, although both are composed of oil and wax.

Jacques Dubois (Sylvius), an author of the first half of the 16th century, wrote this in his *Pharmacopoea* (1548) about the consistency of *unguenta* in comparison with similar external preparations:[31]

> An *unguentum*, called so because it is for anointing parts [of the body], is thicker than an *oleum*, and more liquid than a *ceratum*, as it is clear from Galen's and other authors' *unguenta*. [...] A *ceratum* has a somewhat intermediate consistency between *unguenta* and *emplastra*.

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Therefore, according to Dubois, the sequence from the thinnest to the thickest is: *oleum - unguentum - ceratum - emplastrum.*

Antonio Musa Brasavola (1500-1555), a learned scholar and physician from Ferrara who had studied in Padua, Bologna and Paris, wrote the book *Examen Omnium Trochiscorum, Unguentorum, Ceratorum, Emplastrorum, Cataplasmatum, & Collyriorum* (1555) where he provided six different formulae for the *Unguentum Comitissae*. He also explained that in antiquity the word *unguentum* did not have the same meaning as in (his) modern times, and that the ancient ointments always contained aromatic substances. He also complained that in modern times there was some confusion about *unguenta*, *emplastra* (also called *cataplasmata*) and *cerata*, but he did not explain the precise differences.[32]

Bernard Dessen van Cronenburg, mentioned before, deals with external medicines in three 'books' of his *De Compositione Medicamentorum* (1556) on *cerata* and *emplastra*, *olea* and *unguenta*. Of course, *olea* were the thinnest. In his introduction to *cerata* and *emplastra*[33] he explains that they were composed since antiquity with oil and wax (as Paulus Aegineta had stated). The proportion of these two substances would determine the consistency of the two types of preparation, which Dessen does not regard as particularly different. If the wax is rather old and the air is cold more oil should be used; if however the wax is recent and greasy and the air is warm less oil and more wax are required. According to Dessen also the name *cataplasma* was used in ancient times, but it was vague. However *unguenta* are thinner than *cerata* and *emplastra*.

Further on, in the specific 'book' on *unguenta*,[34] Dessen explains with some displeasure that at some point the ancients decided to enrich them with aromatic substances in order to make them more pleasurable. They anointed the body for recreation rather than out of necessity, but a more sober lifestyle had rightly prevailed among the Romans.[35]

Jean Du Boys,[36] active in the 16th century like the authors just mentioned, wrote his *Methodus Miscendorum Medicamentorum* dealing entirely with external medicines, and specifically with *cerata*, *emplastra*, *unguenta* and *olea*. Although he differentiates between the first three of these groups, he also explains that they can be prepared with the same active ingredients and that their virtues and use are not substantially different.

According to Du Boys these preparations to be applied externally to the body are in this sequence from the thinnest to the thickest:[37] *linimenta - unguenta - cerata - emplastra*. The degree of thickness is determined by the proportion between the oil and wax used as excipients. Du Boys explains that *cerata* are named after the wax (*cera*) that they contain, but they contain less of it than *emplastra*, which are thicker.

At the end of the following century Nicolas Lémery confirmed Du Boys's sequence precisely in his *Pharmacopée Universelle*, but he added that such a distinction was no longer meaningful. At the beginning of the chapter on *Onguents, Liniments & Cérats* in the section on external medicines he wrote:[38]

> The term *onguent* comes from the Latin verb *ungere*, and because one can anoint with oils as well as with *onguents*, the Ancients used to call the aromatic oils for rubbing the joints *onguents*, and those who sold them were called *Unguentarii*: but today when we talk of *onguents* we mean compositions made of fats, oils, waxes, powders, to which we approximately give the consistence of fats. [...] A *liniment* [...] is a mixture of ointments, or of wax and oil, and is thicker than oil, but thinner than an *unguentum* [...]. *Cérats* get their name from wax [...]; they used to be thicker than *onguents* and thinner than *emplâtres*, but today we do not follow any rule on this.

Lémery adds that there is no point in having *onguents*, *liniments* and *cérats* in separate chapters, but he makes an exception for *emplâtres*, which appear separately. In the chapter *De Emplâtres* he explains:[39]

> An *emplâtre* is the thickest composition among all those that are applied externally.

Acknowledgement

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Authors' Addresses:

Patrizia Catellani, *patcat@interview.it*;

Renzo Console, *mail@renzoconsole.demon.co.uk*.

End Notes and References

1. Varignana G. *Secreta Sublimia ad Varios Curandos Morbos.* Pavia: Bernardinus de Garaldis, 1519: 70r.
2. All the earliest books - by various authors - which mention the Ointment were printed in Italy (but always in Latin); and the earliest foreign edition found so far was published at Lyons in 1525. But also this is in Latin and by Guainerio.
3. Manlio del Bosco G.G. *Luminare Maius*. Pavia: Antonius de Carcano, 1494: 76rv (numbered by hand).
4. Nicola Fiorentino (called Nicolaus Florentinus in Latin) was a famous physician in Florence, but only fragments or quotations of his works have been preserved. Some historians have identified him as Niccolò Falcucci, physicist and physician (circa 1330-1412). He enrolled in the guild of physicians and apothecaries in 1353.
5. Biographical information about Guglielmo da Varignana can be found in the following essays. Samoggia L. *I Varignana.* Bologna: Gamma Tipografia, 1963: 97-106, 121-122, 125; Arieti S. Una Famiglia di Medici Illustri: Bartolomeo e Guglielmo da Varignana. *XXXI Congresso Internazionale di Storia della Medicina - Atti.* Bologna: Monduzzi, 1990: 13-24.
6. Bartolomeo still appears to be more famous than Guglielmo. He is remembered for his commentaries on Galen and his treatise *Practica a Capite usque ad Pedes*; but they have not been printed and therefore can only be found as manuscripts.
7. Guglielmo got married twice and had three daughters (Beatrice, Azzolina and Eufrasia), but not having any sons he adopted two (Donato and Pietro).

8. According to a note placed at the end of the book. We are going to see the particular relevance of Zara to the creation of the Countess's Ointment when we discuss the possible historical identity of the Countess.

9. It is a treatise of therapeutics where the diseases are organised in the traditional order, i.e. according to the organs of the body from the head to the feet.

10. And children used to be baptised soon after birth.

11. Reference 3.

12. Reference 5.

13. Reference 1.

14. For the English names of the ingredients the present authors have used as far as possible the words that appear in Culpeper N. *Pharmacopoeia Londinensis: or, the London Dispensatory*. London: Hanna Sawbridge, 1683: 230.

This is the list of the ingredients according to Culpeper:

> Middle Bark of Acorns, Chestnuts, Oaks, Beans the beries of Myrtles, Horstail, Galls, Grape stones, unripe Services and Medlars dried, leaves of Sloe-tree, roots of Bistort and Tormentil; Plantane water; yellow wax; Oyl of Mirtles simple; middle bark of Acorns, Chestnuts, and Oak, Galls, juice of Hypocistis, Ashes of the bone of an Ox Leg, Myrtle berries, unripe Grape stones, unripe Services; Troches of Amber; Oyl of Mastich.
>
> In particular, *service* designates a European tree or its fruit, rare in England, named *Sorbus domestica L.*

Some of the ingredients occur twice because they are used differently in separate phases of the preparation, as in the description given originally by Guglielmo da Varignana.

15. Dessen van Cronenburg B. *De Compositione Medicamentorum*. Lyons: Haeredes Iacobi Iuntae, 1556: 792-797.

16. The solid residue from filtering was no longer used, but some of the same ingredients appeared again in group (c) to constitute, when finely powdered, the solid part of the ointment.

17. Reference 3.

18. Among them we can mention Antonio Guainerio (*Tractatus de Matricibus*, 1474), Manlio del Bosco (*Luminare Maius*, 1494), Paolo Suardo (*Thesaurus Aromatariorum*, 1525), Antonio Musa Brasavola (*Examen Omnium Trochiscorum, Unguentorum, Ceratorum, Emplastrorum, Cataplasmatum, & Collyriorum*, 1555), Valerius Cordus (*Pharmacorum Conficiendorum Ratio*, 1548), Bernard Dessen van Cronenburg (*De Compositione Medicamentorum*, 1556), Leonhart Fuchs (*De Componendorum Miscendorumque Medicamentorum Ratione*, 1563), Jean Du Boys (*In Methodum Miscendorum Medicamentorum Observationes*, 1572), Bartolomeo Castelli (*Totius Artis Medicae Methodo Divisa Compendium & Synopsis*, 1597), Tobias Dornkrell ab Eberhertz (*Von Der Angehenden und Hin und Wieder Bereit Grassirenden Pestilentz dieses 1603. Jahrs*, 1604), William Salmon (*Pharmacopoeia Londinensis, or, the New London Dispensatory*, 1678), Nicholas Culpeper, *Pharmacopoeia Londinensis: or, the London Dispensatory*, 1683), Nicolas Lémery (*Pharmacopée Universelle*, 1697), Giovanni Battista Capello (*Lessico Farmaceutico-Chimico, Contenente li Rimedj Piùi Usati d'Oggidì*, 1763).

19. Traister B.H. 'Matrix and the Pain Thereof': a Sixteenth-Century Gynaecological Essay. *Medical History*: 1991; 35: 436-451.

20. The word '*Trotula*' was regarded as the name of the author, a female medical expert who lived at Salerno in the 11th century. She has been presented by some as being a teacher at the famous School of Salerno (although it is unlikely that in the middle ages a woman was allowed to teach medicine in a university).

The American scholar Monica Green has recently clarified that Kraut's text came from a manuscript arranged by an anonymous compiler at the end of the 12th century, entitled *Summa Que Dicitur 'Trotula'*. The manuscript contained three separate texts and the compiler had merged them eliminating repetitions. Probably the three texts were by different authors, but the second one was unanimously attributed by all scribes to a woman from Salerno called Trota (or Trocta, or Trotta).

Green has been able to make the three original unabridged texts available to contemporary researchers in their entirety, with the addition of her English translation. Her work has been published as *The Trotula - A Medieval Compendium of Women's Medicine*. Philadelphia: University of Pennsylvania, 2001.

21. The translation is by Monica Green (see Reference 20: 161).

22. Montagnana B. *Antidotarium*. Venice: Octavianus Scotus, Bonetus Locatellus, 1497: 376v-377r.

23. *Experimenti de la Exma Sra Caterina da Furlj*. Imola: Tipografia Ignazio Galeati e figlio, 1894.

24. Even before obtaining his medical degree, Fernel had accurately measured the length of a degree of the meridian (and therefore the precise size of the Earth) for the first time. He was physician to the king Henri II and his wife Caterina de' Medici. In his medical works he was the first to use the terms 'pathology' (invented by him) and 'physiology' (taken from Aristotle).

25. Fernel J. *Therapeutices Universalis seu Medendi Rationis Libri Septem*. Lyons: Sebastianus Honoratus, 1571: 539-540.

26. Charas M. *Pharmacopée Royale Galénique et Chymique*. Paris: Chez l'Auteur, 1676: 498-500.

27. In fact the method proposed by Charas for the preparation of the ointment is a little simpler than the one described by Varignana, although many ingredients are the same.

28. Lémery N. *Pharmacopée Universelle*. Paris: De Saint & Saillant, Jean-Thomas Herissant, Nyon, Savoye, d'Houry, Didot le jeune, 1764: 1085-1087.

29. As Charas's book had been published 21 years earlier than Lémery's first edition, we seem to have a case of plagiarism.

30. Degli Augusti Q. *Lumen Apothecariorum*. Turin: Nicolaus de Benedictis & Jacobinus Suigus, 1492: 28r.

31. Dubois J. *Pharmacopoeae Libri Tres*. Lyons: Gulielmus Rouillius, 1548: 384, 391-392.

32. Brasavola A.M. *Examen Omnium Trochiscorum, Unguentorum, Ceratorum, Emplastrorum, Cataplasmatum, & Collyriorum*. Lyons: Sebastianus Bartolomaei Honorati, 1555: 244-245.

33. Reference 15: 573-575.

34. Reference 15: 752-755.

35. We have already seen that Brasavola, too, had written about the presence of aromatic substances in ancient ointments.

36. Not to be confused with Jacques Dubois mentioned earlier.

37. Du Boys J. *In Methodum Miscendorum Medicamentorum Observationes*. Paris: Iacobus Keruer, 1572: 2r-3r, 53rv.

38. Reference 28: 1062-1063.

39. Reference 28: 1146.

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38th International Congress for the History of Pharmacy, Seville

The 38th Congress of the International Society for the History of Pharmacy was held at the NH Central Convenciones Hotel, Seville, from the 19-22 September. Pre-Congress tours were available to Cordoba, Granada and Jerez. There was a morning visit to the Archivo de Indias Museum and later a conducted tour of the city and in particular the buildings which were constructed in Saville by the participating Nations in the Seville Expo of 1929. In the evening a walk through the old town ended with a reception in the Reales Alcázares. This combined castle and palace has been used at some time by every head of state for the past two thousand years. A guided tour of the magnificent Arabic inspired interior ended in the Alcazar Gardens.

The congress proceedings started with the formal opening and welcome speeches from the President of the Scientific Committee, Prof. Teresa López Díaz, the President of the Organising Committee, Prof. Estoban Moreno Toral, the President of the Society of University Professors for the History of Pharmacy in Spain, Prof. Juan Esteva de Sagrera and the President of ISHP, Prof. Olivier Lafont.

In a short General Assembly the Japanese History of Pharmacy Society, the History of Pharmacy section of the Serbian Pharmaceutical Society and the History Division of the Hungarian Society of Pharmaceutical Sciences were welcomed as members of ISHP. This was followed by the Congress lecture 'From Mercury to Miracle Drugs: Syphilis therapy over the centuries' given by Dr. John Parascandola from the University of Maryland, USA.

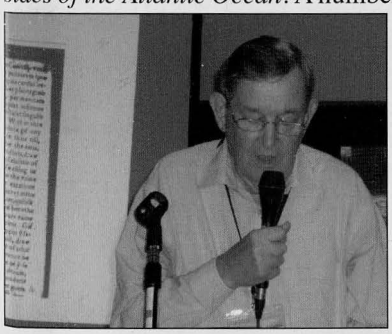
The Symposium Sessions were the meat of the conference, with 228 papers presented during the next three days, covering a wide ranging and fascinating list of subjects. Many responded to the conference theme of *Drugs and medicines from both sides of the Atlantic Ocean*. A number of papers were presented by members of BSHP: 'Making Ambrosia accessible for the masses' by Annette Bierman, 'The drugging of the Empire' by Stuart Anderson, 'Drugs actually used in Europe before the discovery of insulin' by Axel Helmstädter, 'Aerial acid' by Peter Homan (given by Stuart Anderson) and 'Gilbert Skeyne and his book' by Peter M. Worling.

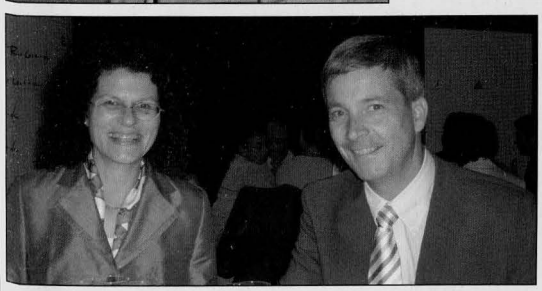
The President of the International Academy for the History of Pharmacy, Prof. Wolf-Dieter Müller-Jahncke, opened the Ceremonial Meeting. After the admission of new members, the plenary lecture was given by Prof. José Luis Valverde López, entitled 'Evaluation of Latin American materia medica and its influence on therapeutics'. This traced the use of drugs from the New World through the records held by the religious orders in Spain, their appearance in formularies and their publication in Pharmacopoeias.

During the closing session of particular interest was a talk by Dr Christiane Staiger on the work she has been doing for ISHP in constructing a database of all the oral presentations that have been given on the history of pharmacy. This shows the author's name, the title, the subject, place and date and the email address, so that the author can be contacted. It can be accessed at *http://ishp.php-space.eu/* or via *www.govi.de/iggp.htm*. If you know of papers that are not included in the database there are instructions on how to have these added. This is a mammoth ongoing task and Christiane was thanked for her work.

The proceedings of the the 38th Congress are due to be available on CD at the next Congress. The 39th International Congress will be held from 16-19 September 2009 in Vienna, on the historical site of the Old Vienna General Hospital, now part of the modern campus of Vienna University. Details will be available at *www.39ichp.org* and it is hoped that there will be a good representation from the United Kingdom.

Peter Worling





Left: Dr Peter Worling's paper; *below left* Christiane Staiger and Axel Helmstädter; *right*: Congress Organising Committee.

Photos: Christiane Staiger

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Review

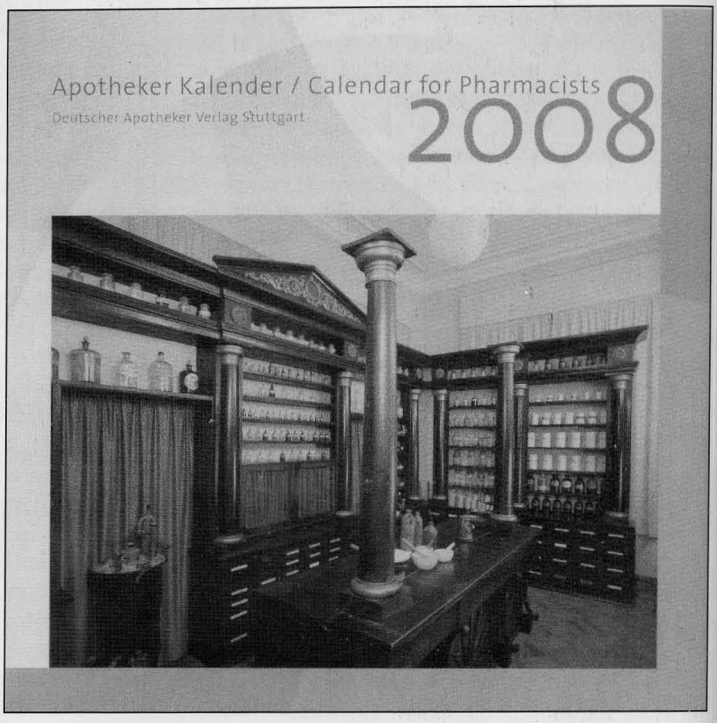
Apotheker Kalender 2008 (Calendar for Pharmacists) Prof. Dr Werner Dressendörfer. ISBN 978-3-7692-4494-6. Obtainable from Deutscher Apotheker Verlag, Postfach 10 10 61, D-70009 Stuttgart, Germany or *service@deutscher-apotheker-verlag.de*; price 68 Euros.

The 2008 Calendar continues the tradition of pharmacy images edited by Prof. Werner Dressendörfer of Bamberg, with translations of the descriptions into English by Diane Blaurock. The cover picture features the early 19th C fittings of the Drees Pharmacy, Bad Bentheim, now in the Osnabruck Cultural Heritage Museum. A decorated wooden model of a typical baroque pharmacy, carved recently for the Brandenburg Pharmacy Museum, Cottbus, illustrates August. There are pictures of various pharmacy containers: wooden and white glazed jars in January and two German faience jars from around 1750 with peacock and crown cobalt blue decoration in April. Two wooden jars for November dating from around 1500 painted with heraldic shields are something of a mystery, for the labels (sweet flag root and zedoary root) are not obviously related to the shield designs.

There are two unusual forms of drug storage. March shows lockable poison cupboards required in Germany for three groups of poisons: inorganic mercurials, arsenic compounds; and organic poisons. Storage of red phosphorus required a special cabinet enclosed in non-flammable masonry with an iron door, while white phosphorus was kept under water, frost-free, in a jar in a tight tin box, both shown in July and also from Cottbus.

Pharmaceutical equipment is represented in September by medicinal plasters and plaster cutters, the forerunners of our modern transdermal patches. Florentine swan-necked receivers of glass, shown in June were used to separate immiscible liquids, while glass or ceramic decanters with orifices at four different levels were used to separate sediments and supernatants.

Pictures of mandragora and 'Scythian lamb' or borometz (actually made from a tree fern) come from Trew's Nuremberg revision of Elizabeth Blackwell's 'A curious herbal' for February. October has various colourful pumpkins and knobbly squashes from



Weinman's 'Phytanthoza' of around 1740. Finally, a devotional picture of SS Cosmas and Damian in a lavishly decorated frame containing relics of these and other saints completes the year.

The Calendar's fascinating collection of images from Prof. Dressendörfer's collection and the pharmacy museums of Heidelberg and Cottbus is greatly enhanced by the commentary on the sources and meaning of the objects, together with German literature references. The depth of pharmaceutical historical resources in Germany is revealed year after year by this series of Calendars.

Ainley Wade

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